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ADVERTISING.

Advertisers are classified and arranged in the following order:—

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THE REWARDS OF ARCHITECTURE.

IN a recent number of *Munsey's Magazine* there was published an article on the profession of architecture, this being one of a series dealing with the great enterprises of the business world. Particular stress seemed to be placed upon the pecuniary rewards which the profession of architecture holds out, and these rewards, which, though they come to few architects in the copious abundance which the *Munsey* writer imagines, are yet very tangible realities, and are so large and enticing in nature that a layman reading the article might very naturally draw the conclusion that architecture is a profession in which the rewards are sure as well as large, and would very naturally wonder therefrom why the profession is not vastly overcrowded and why all bright young men should not devote themselves at once to preparing to reap the magnificent incomes which the magazine writer depicted so alluringly. In one sense the profession of architecture is decidedly overcrowded. We doubt if there is any calling in which the subordinate ranks are any more crowded than in architecture. Our universities are grinding out graduates by the score year after year, but somehow the number of practising architects who win large financial returns increases but very little from decade to decade. The reason is not hard to discover. It is very easy to get into the lower ranks of architecture, but he who would aspire to the great prizes must spend so many long years in arduous preparation that unless he has a special aptitude for that particular kind of work he is pretty sure to be tired out and thrown off the track before he arrives. It requires very little talent to be a third-rate architect. It requires a great deal to be first-rate. And though there are exceptions, and some architects who are mere business managers are able to reap large pecuniary rewards, it is nevertheless true that the large rewards are every year being more and more turned into the hands of the best fitted. Architecture is a profession which, as we understand it, will never be overcrowded in the upper ranks. There will always be room for the thoroughly well equipped architect, and though we occasionally hear pitiable stories of pluck and courage in the face of long years of small business and no prospects, such as was told in the columns of a contemporary a few weeks since, it is extremely rare to find a thoroughly well equipped architect with a natural bent for architecture who fails of an opportunity to exercise his talents. We think the *Munsey* article, which by the by seems like the work of a layman, exaggerates the financial rewards. The average income of a good architect we imagine rarely exceeds six or eight thousand dollars a year. At the same time the rewards are pretty certain for the right kind of men, and the profession has advanced amazingly during the last quarter of a century in its financial possibilities no less than in its artistic intrinsic capabilities.

ONE by one the states of this country are falling into line on the matter of supervision of the practice of architecture. We have just received from a subscriber at San Diego an abstract of "an act to regulate the practice of architecture as a profession in the state of California," with a copy of the laws and rules of the board. The carrying out of the act is committed to a dual board consisting of ten members, five of whom have jurisdiction over the northern part of the state and five over the southern. It is provided in the act that half of the board shall be members in good standing of the San Francisco Chapter of the American Institute of Architects, or some similar institution or association of architects. This board is empowered to formulate and

adopt its code of rules and regulations so long as they shall not be inconsistent with the general intent of the act. Any person shall be entitled to examination for certificate for the practice of architecture upon payment to the district board of fifteen dollars. Should he be successful in his examination, he is required to pay a further fee of five dollars. It is provided, however, as in nearly all of the other states in which such legislation has been made, that any architect in good standing engaged in the practice of his profession on the date of the passage of the act shall be granted a certificate without examination upon payment of a fee of five dollars, but such application must be made before September twenty-third of this year. The act further stipulates that no person shall practise architecture without a certificate under penalty of a fine of not less than fifty dollars nor more than five hundred dollars. The law as a matter of fact is rendered of rather doubtful efficiency for the reason that it is expressly stipulated that "nothing in the act shall prevent any person from making plans for his own building nor furnishing plans or other data for buildings for other persons, providing the person so furnishing such plans or data shall fully inform the person for whom such plans or data are furnished that he, the person furnishing such plans, is not a certified architect." It would seem to us that under that clause of the law there is no real necessity of a certificate of any sort except as a matter of personal pride or business advertisement. It has been found that in Illinois the last named motives really count for a great deal, and it is quite probable that although the California law practically leaves it optional with an architect whether he shall or shall not have a license, the natural workings of human nature will probably result in a very general application for licenses. In regard to architects residing outside of the state, they are not required to pass an examination provided they can present satisfactory evidence of competency upon which they can obtain a temporary certificate upon payment of the fee of five dollars. The act is weak, furthermore, in that it does not distinctly define what an architect is, and the provisions apparently do not apply to engineers or constructors of any sort.

Among the by-laws we note that a diploma of graduation from the full course of architecture or architectural engineering of any university or technical school approved by the board may be accepted in lieu of an examination. We notice also a curious provision in regard to the seal which a licensed architect is required to possess, that as this seal is for the purpose of making an impression a rubber stamp is not permitted. The subjects for examination sound very comprehensive. They include the demonstration of ability to make practical application of knowledge in the ordinary professional work of an architect as follows: 1. Merit as investment. 2. Planning. 3. Construction. 4. Design. 5. Rendering. Beyond this there are the ordinary requirements which are found in all technical schools and in all similar laws.

The law is good as far as it goes and is on the whole a very fair beginning. It is a pity that it could not go a great deal further and be really mandatory instead of simply permissive.

THE development of the typical American public schoolhouse plan has called for a great deal of study and thought, and to the solution of the problems involved probably no one has contributed more than Mr. Edmund M. Wheelwright, whose book on School Architecture has just been put on the market. The architectural profession in this country can feel a great deal of pride in the schoolhouses which have been evolved as a result of so much study and which have met the public demand so completely. There is even now, however, hardly a single large city in this country wherein the school accommodations are entirely adequate to the demands. There is a constantly increasing necessity for larger and better schoolhouses, and at the same time the architectural necessity that schoolhouses shall be artistic is growing in every community. Mr. Wheelwright's book is therefore specially timely, and it is one which appeals not merely to the trained architect, but with quite equal force to every one who is interested in schoolhouse construction. This book should be in the hands of every school committee. It is not likely that any publication of this sort would make good architects out of good school committee men, — that is neither necessary nor desirable, — but it would show to the intelligent reader how schoolhouse architecture has developed and how a schoolhouse may be not only thoroughly well planned, but also well designed. It is fair, we think, to claim that this book marks an epoch in schoolhouse construction. The time was not very long since when almost anything would answer for a schoolhouse, and the structures in which our ancestors learned the rudiments of education were cheerless, barren and often unsanitary. The modern school can and should be a thing of beauty in which the most exacting considerations of hygiene, lighting and arrangement are most scrupulously considered. Mr. Wheelwright has rendered a great service in reducing the requirements of a modern schoolhouse to least terms, expressing them in a concise, comprehensive manner and formulating the results of the best practice both here and abroad. The work is by no means exhaustive. Within the last few years thousands of well-built, well-equipped schoolhouses have made their appearance in various parts of the country, and the writer could only select from the best of material which was offered; but he has gathered together the typical examples of all sorts and has brought to the subject an analytical mind and a trained intellect, which makes his deductions of great value.

A. I. A. CONVENTION, BUFFALO, N. Y., OCTOBER 4 AND 5.

The thirty-fifth Annual Convention of the American Institute of Architects will be held at Buffalo, Oct. 4 and 5. Quarters have been secured for members near the Exposition grounds. Members who have not already signified their intention of being present should send their names at once to Mr. William H. Broughton, Secretary, Buffalo Chapter, Prudential Building, Buffalo.

A very interesting program has been arranged for the Convention, and the indications are that a large number of members will be in attendance.

Brickbuilding in Modern France. III.

BY JEAN SCHOPFER.

WE will examine in this article more interesting brick residences. The examples will be varied so as to demonstrate the diversity of forms to which brick has been applied.

In Fig. 1 we see it employed in the wisest and most sober manner, in a rich private house on the Parc Monceau, frames of stone appearing at the windows only.

There is something restful in the simplicity of this house, and we find pleasure in contemplating it after

FIG. 1. PRIVATE HOTEL, PARIS.

having visited some of the fantastic structures which we are obliged to accept under the head of modern art.

Fig. 2 is of an apartment house in the west of Paris. It is by one of the most interesting of the young architects, Mr. Plumet, and is of light-colored brick. The window arches are interesting, and the whole of great sobriety. There is, however, a slight heaviness in the central balcony of the fourth floor.

The villa reproduced in Fig. 3 is at Asinères. The bricks are of two shades, and the whole framed in

FIG. 3. VILLA AT ASINÈRES.

ponderous chains of white stone. The general effect is bad.

I prefer, however, original as it is, the next little house (Fig. 4). The architect was instructed to build a home for a bachelor. He was told that the house must be of limited dimensions, but that there should be a large drawing room where the master of the house could receive his friends. And so all the high ground floor is occupied by one vast room, and the private apartments are on the upper floor. From this comes the tower-like aspect of the little house. When the photograph was taken it stood quite alone in a street of vacant lots. The growth of the city towards the west has changed the appearance of its surroundings, and now the Romanesque tower is flanked by small Renaissance houses.

Fig. 5 is a house which I do not give as a model, but which is of interest because it shows that something may be done with brick alone, and that we can find color

FIG. 2. APARTMENT HOUSE, PARIS.

effects without eternally turning for them to white stone and red brick.

The stable and coachman's house (Fig. 6) in the courtyard of a big private house in the Rue Ampère are built of the same material. Here the brick of the ground floor is varnished, and on the first floor it fills the intervals between a timber work which is a real timber work, bearing weight, and not an application of a lattice on an ordinary wall which we have so often seen in England. The effect is gay, and the owners can dispense with the usual dining-room stained-glass windows destined to hide the court from view.

The house illustrated in Fig. 7 and situated on the Avenue Henri Martin is by the same architect who built the Greek Pavilion, which we examined in the preceding article, Mr. Magne.

It also is of brick, well designed and of good color effect. White stone appears here in the window frames,

FIG. 4. PRIVATE HOTEL, PARIS.

but its arrangement is by no means traditional and has evidently been independently thought out, according to its rôle in the building. The arches of the windows introduce a red note in the light-colored façade. In the right fore part of the house where the three windows are joined in one a discharging arch of red brick strengthens the wall above the vast opening.

The tiles in the frieze, of enameled terra-cotta, placed under the cornice, complete the decoration of the façade.

FIG. 5. PRIVATE HOTEL, PARIS.

FIG. 6. RUE AMPÈRE, PARIS.

The last work to be seen is by the excellent brick specialist, Mr. Train (Fig. 8). It is a house on the Place St. Sulpice. It is entirely of brick and treated in the most agreeable and simple way. The iron lintels of the windows are visible. The varnished brick in the walls are in relief. The upper arches are ingeniously drawn. In fact the façade is a model from the point of view of decoration and brick construction.

The façade faces a court, not the street. The building to which it belongs is a shop of religious works of art. Hence the design of the windows.

Before examining brickbuilding in the north of France, where it has always been held in great favor, we give an illustration (Fig. 9) which will serve to illustrate one way of employing brick as an accessory, to show its intervention as a purely decorative element.

FIG. 7. PRIVATE HOTEL, PARIS.

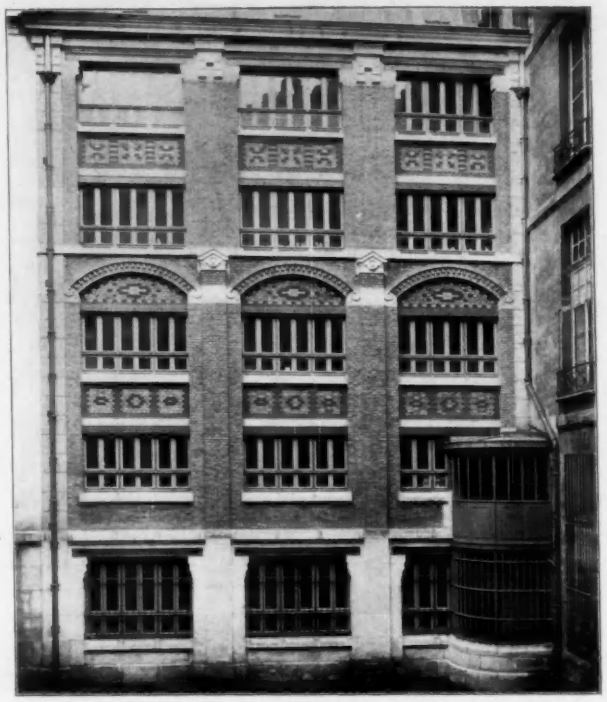


FIG. 8. BACK OF STOREHOUSE, PLACE ST. SULPICE.

It is a large villa designed by Mr. Grandpierre.

The walls are in *pierre meulière;* brick and white stone intervene to enliven the angles, the window frames and the walls beneath the cornice. The whole is picturesque and highly colored, as a country residence should be.

AN UNUSUAL CASE.

COMPETITIONS of the old and more familiar sort have usually meant a selfish scramble on the part of some unfortunate architects to secure the approval of a few well-meaning but misguided committee men. It is not always thus, however. A subscriber writes us from Omaha calling attention to the proceedings of the county commissioners of Hall County, Nebraska, who were authorized to employ an architect for a proposed eighty-five thousand dollar courthouse. Several architects were invited to meet the commissioners. After a conference with the six architects present and before the meeting adjourned, the commissioners selected an architect, J. R. Kimball of Omaha, agreeing to pay five per cent commission on the cost of the building and in addition all traveling and other expenses, plus eighty-five dollars per month for superintendence. Such practice is not as rare as it was a few years ago, but it is none the less deserving of commendation, and it shows that the architect's position is not in the forlorn condition which some of us remember so well. It is our conviction that competitions for any except the large monumental public buildings do far more harm than good, are an expense to every one concerned, and simply delay the final selection of an architect without any compensating advantages. We have yet to know of a single competition for buildings of the larger type in connection with which the desired results would not have been accomplished quicker, with less expense and with pleasanter feelings on the part of every one concerned, had the procedure been adopted which appears to have worked so successfully at Omaha. The architecturally uneducated public has an idea that a competition among architects is instituted for the purpose of selecting or obtaining or in some mysterious manner evolving plans. As a matter of fact this is not true; a competition means simply the selection of an architect, and in nearly every instance after the architect is selected the whole problem has to be restudied, and valuable time, money and nerve tissue are wasted. We certainly congratulate the commissioners of Hall County both on their method of procedure and on the result of their selection.

FIG. 9. VILLA BY GRANDPIERRE.

GARDEN VIEW OF HOUSE, PLACE DES UNIS, PARIS.

Architectural and Building Practice in Great Britain.

BY OUR SPECIAL REPRESENTATIVE.

THE most important event in the architectural world since the publication of my last letter in THE BRICKBUILDER has been the action taken in regard to the national memorial to our late revered Queen Victoria. When the executive committee discussed the matter,

GARDEN FRONT, HOUSE AT FOUR OAKS, SUTTON COLDFIELD, W. H. BIDLAKE, ARCHITECT.

three points came before them: the first, as to whether one architect of eminence should be selected for the work; the second, as to whether there should be an open competition; and the third, as to whether a few men should be selected to prepare designs and be remunerated for their trouble. Unfortunately, the last course was adopted. A great outcry against the decision was raised in the public and technical press, when many leading architects and artists expressed themselves strongly in favor of an open competition. The five architects chosen by the committee were Mr. T. G. Jackson, Mr. Aston Webb, Mr. Ernest George, Sir Thomas Drew and Dr. Rowand Anderson; Mr. Brock being the selected sculptor, around whose statue the architect will be asked to arrange an architectural envelope. In making such a choice the committee, after selecting the first three architects, seem to have been influenced by a patriotic spirit, which caused them to throw in a representative of Ireland and of Scotland.

Mr. Norman Shaw's opinion on architectural matters is probably the most influential in this country at the present time, and he had no reticence in expressing his dissatisfaction with the restriction of the competition to a few men. He pertinently remarked: "English architects of to-day know nothing of monumental work. This is perhaps because they have done so little of it. That little has been done badly. In this respect there is a vast difference between ourselves and the French and the Germans. Our best work is domestic architecture, theirs monumental. In the hands of people who could design the Arc de Triomphe and the magnificent votive church at Montmartre, such a work as the Victoria Memorial would be perfectly safe." And not only did the committee make a great mistake in selecting only a few men to submit designs, but it was worse to choose only one sculptor, especially at a time when the great art was witnessing revivals both in this country and in France. It would be waste of time to repeat what other prominent men have said about this memorial; suffice it to say that from the very first there has been an emphatic demand for an open competition. The site chosen by the committee is that of Buckingham Palace, and it is generally understood that the memorial will occupy a position directly facing the building, with an avenue of columns or sculpture leading up to it. There are two objections to this site. The one is that Nash's palace is not worthy to form the architectural background to a great memorial, and the second that the line of the building and that of the mall are not in accord, the mall leading slantwise to the palace.

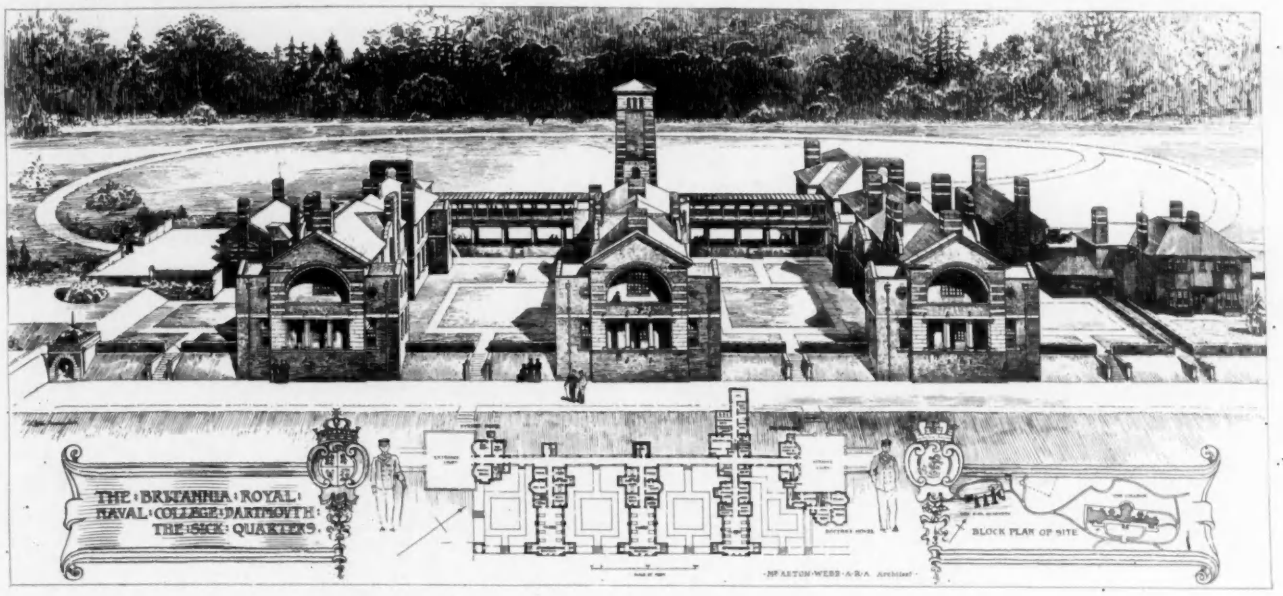
The Royal Academy exhibition this year is not exceptional, the architectural room especially preserving its wonted appearance. There are 166 drawings exhibited, — which is fewer than usual, — and of these the domestic work is, on the whole, good, several delightful country houses being shown; such as "Glebelands," a red brick building in Mr. Ernest Newton's most characteristic manner, the round-topped gables being very familiar. Mr. Aston Webb's "Sick Quarters for the Britannia Royal Naval College at Dartmouth" (of which an illustration is here given) is skillfully planned and worthy of this architect. The buildings are now in course of erection, the walls being faced with red brick, with Portland stone dressings. Mr. Caröe shows several churches (the one here illustrated is about to be erected of local bricks and tiles. The chief characteristics of the plan are the single-span nave and the arrangement of the sanctuary and east window).

In April last the Building Trades' Exhibition was held at the Agricultural Hall, London. It was the most com-

HOUSE BY PENTY & PENTY.

plete of its kind up to the present and was well attended by architects, builders, engineers and others. In connection with it an important conference between representatives of the Royal Institute of British Architects, the Institute of Civil Engineers and brickmakers was held relative to the proposed standardization of bricks. As was pointed out by Mr. Thomas Blashill (late superintendent architect to the London County Council), who

presided, a great difficulty arises by reason of the varying sizes of bricks needed to be used in the same wall, and it is very desirable that a standard should be determined. The following resolutions, drawn up by a joint committee of the two institutions named above, were submitted to the meeting:



The length of the brick to be double the width plus the thickness of one vertical joint.

Brickwork to measure four courses of bricks and four joints to a foot.

Joints to be ¼ inch thick and an extra 1-16, making 5-16 inch for the bed joints, to cover irregularities in the bricks; thus giving a standard length of 9¼ inches center to center of joints.

The bricks to be measured in the following manner:

HITCHIN TOWN HALL.

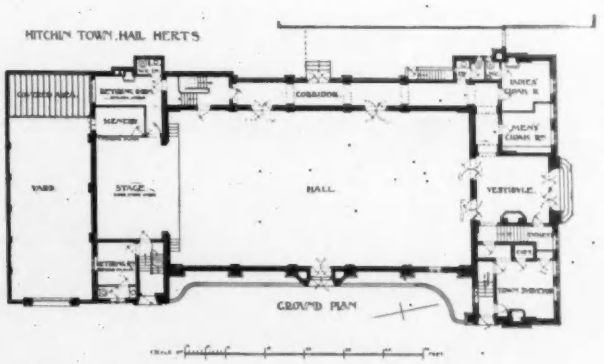
Eight stretchers laid square end and splay end in contact in a straight line to measure 72 inches.

Eight headers laid side by side frog upwards in a straight line to measure 35 inches.

Eight bricks laid, the first brick frog downwards and then alternately frog to frog and back to back, to measure 21½ inches.

The foregoing to apply to all classes of walling bricks, both machine and hand made, and facing bricks.

A variety of opinions were expressed at the meeting, and nothing more definite was arrived at than a resolution "that it is desirable to form a committee to consider the propriety of standardizing the size of bricks." Despite the diversity of opinion on this matter, however, of three things there is no doubt: First, that it is extremely difficult to determine what the shrinkage in a particular brick will be; secondly, good bricks conforming to the standard will cost more than those which do not; thirdly, brickmakers at present experience no difficulty in selling their bricks irrespective of any standard, and therefore, if any change is made, it is for the convenience of architects, engineers and contractors. Perhaps the most the committee can do is to decide on a standard and leave it to the brickmakers to do their best to conform to it; but brickmaking is not an exact science, and those bricks which will need to be "thrown away" because they are above or below the standard size will doubtless offer considerable hindrance to the proposal being adopted throughout the country. It is interesting at this juncture to note that the further south one goes the smaller are the bricks. They are smallest in Italy, then in Holland they are 2 inches thick, in London 2½ inches, while in Edinburgh the thickness increases to 3 inches and 3½ inches.



PLAN, HITCHIN TOWN HALL.

Two men of note in the architectural world have recently died — Mr. J. M. Brydon and Mr. Arthur Cates. The former was the architect of the great new building for the Local Government Board and Education Department now about to be erected in Whitehall, and it is a melancholy fact that, like Mr. William Young (the architect of the new War Office), Mr. Brydon should not have lived to see the completion of his greatest

CHURCH BY W. D. CARÖE.

work. Mr. Cates devoted himself to architectural education and was largely responsible for the examinations now held by the Royal Institute of British Architects.

In concluding, I may refer to those of the accompanying illustrations which have not already been mentioned.

In the house by Messrs. Penty & Penty, sandstock facing bricks (2¼ inches thick), with rubber arches and quoins, are being mostly used, finely tooled stone being employed for the dressings. It is intended to cover the roofs with sea-green Westmoreland slates, laid in courses which diminish from eaves to ridge, the coverings to ridge and hips being of lead.

The new Town Hall at Hitchin (in Hertfordshire) has a frontage of 78 feet, and its architectural style may be described as a simple treatment of the late English Renaissance. The joint architects of the building were Mr. E. W. Mountford and Mr. Geoffry Lucas.

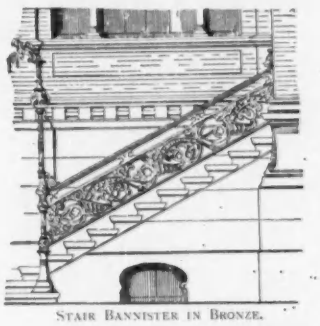
The house at Four Oaks, Sutton Coldfield, was designed by Mr. Bidlake for himself, and is an excellent type of the new domestic design. It is more especially successful in its grace and modeling (if the latter term may be borrowed from another branch of art), suggesting comparison with the domestic buildings of Gloucestershire, which are unsurpassed in this respect.

The Life and Works of Rafael Guastavino. Part III.

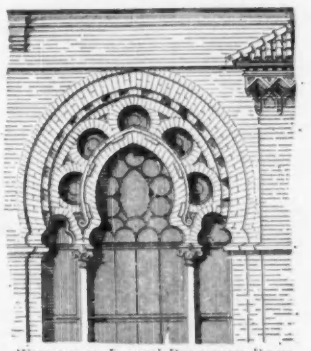
THE PRACTICE OF ARCHITECTURE AND COHESIVE CONSTRUCTION IN AMERICA.

BY PETER B. WIGHT.

IT has been told in a previous paper how Mr. Guastavino's first work in America was architectural practice. Some reminiscences of this may be interesting. As stated, he came to this country in 1881, attracted by what he considered to be an appreciation of his work in Spain, as shown by the award of a medal at the Philadelphia Exposition, 1876, not knowing that nearly every exhibitor received a bronze "medal of merit" and no graded awards were made. He saw at once that here was a greater field for his talents than in the old country; but how to get the chance to cultivate it was not so clear to him. He had introductions to several architects in New York, but they did not enthuse over his ideas of construction. He therefore sought to bring himself before the public as an architect, and got an opportunity in the only journal then open to him, *The Decorator and Furnisher*, to publish some of his original drawings and perspectives on the Spanish Renaissance, with descriptive essays. He then got an opportunity to submit designs in competition for the new building of the Progress Club on 59th Street near 4th Avenue. In this he was successful and was chosen as architect for the building. Afterwards the late Henry Fernbach, who was the expert adviser of the committee and had recommended Mr. Guastavino's design for adoption, was appointed as consulting architect, and together they carried out the work. The front of this building (of which we present some details) was then the only brick front in this country



STAIR BANNISTER IN BRONZE.



WINDOW OF LADIES' RECEPTION ROOM.

CENTRAL WINDOW OF BILLIARD ROOM

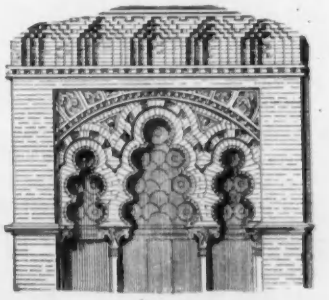


FIG. 1. DETAILS FROM THE FRONT OF THE PROGRESS CLUB, NEW YORK.

treated according to real Moorish principles. It is in the "Mudejar" style of the primary epoch, one of the phases of the beginning of the Spanish Renaissance before the Italian influence came in as the result of the Hispano-Italian wars. It is also illustrated and described in *The Decorator and Furnisher* of June, 1883.

Before the clubhouse was finished he again succeeded in a competition for the synagogue at Madison Avenue and 65th Street, New York. In carrying out this building he selected as his associate architect Mr. Schwartzman. He made all the drawings and details for both of these buildings, as well as designs for the interior decorations. He was next employed by Mr. Bernard Levy to design a residence. Mr. Levy had enough confidence in him to allow him to introduce his system of cohesive construction, and in this house, the first in America, he used his timbrel arches from basement to roof, and built the stairway with tiles and cement.

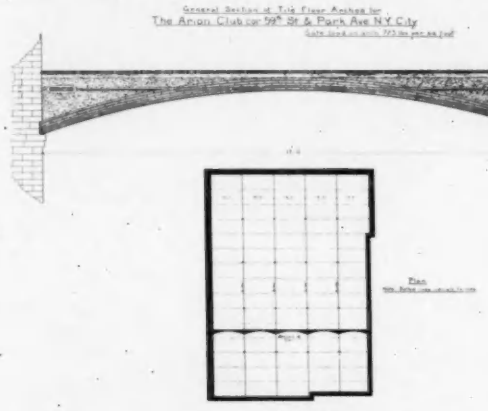


FIG. 2.

The same year he competed for the Arion Club, but was unsuccessful, and this was his last attempt to practise architecture as a profession. He however succeeded in getting the contract for the floor construction, which was shown on his plans. The illustration here given (Fig. 2) shows a plan of one of the floors and a section of the construction. It will be seen that these arches of seventeen feet span are not domical, but plain segment arches made of five thicknesses of tiles, and computed to carry the extraordinary safe load of 725 pounds per superficial foot. They are such as he would not now recommend for such a building, but it was necessary to make them five inches thick to insure confidence in what was regarded by all but himself as an experiment. Another reason that actuated him in so doing was that, as he had as yet not been able to put entire confidence in the Portland cement he was using, he set the first *two* courses of tile with plaster of Paris. His main object in coming to America was thus accomplished, and he was now successfully launched as a contractor and expert. He had designed several private houses also, not above mentioned, and as soon as they were completed had no more desire to combine the profession of architecture with the business of a contractor, as he had done in his own country, especially as it was not considered good practice to unite them in our own.

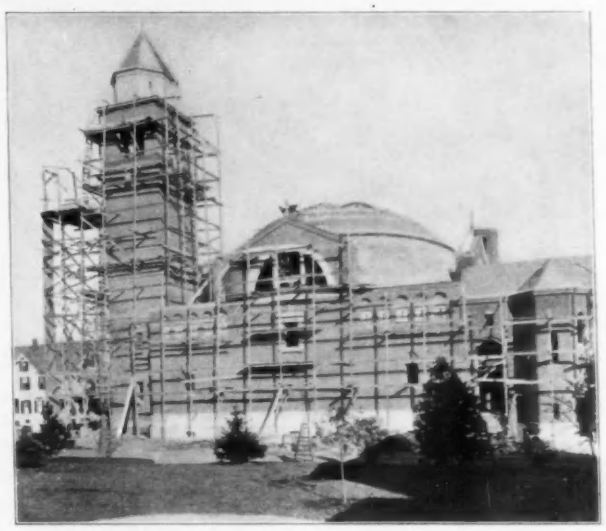


FIG. 3. GRACE UNIVERSALIST CHURCH, LOWELL, MASS.

He called his construction "timbrel arches" or "Spanish arches," but was surprised to find that architects would not call them by these names, but preferably as "Guastavino construction," by which they are now known.

The number of buildings in which cohesive construction has been used since those above mentioned has been so great that it would be manifestly impossible in the limits of these articles to mention and describe all of them. Nor is it necessary, for they are the work of some of our most eminent architects as well as of Mr. Guastavino, and many of them are well known to the architectural profession through observation and publications. If some of the most important are not herein mentioned, it will be because they have already been illustrated in THE BRICKBUILDER and other journals. No attempt will

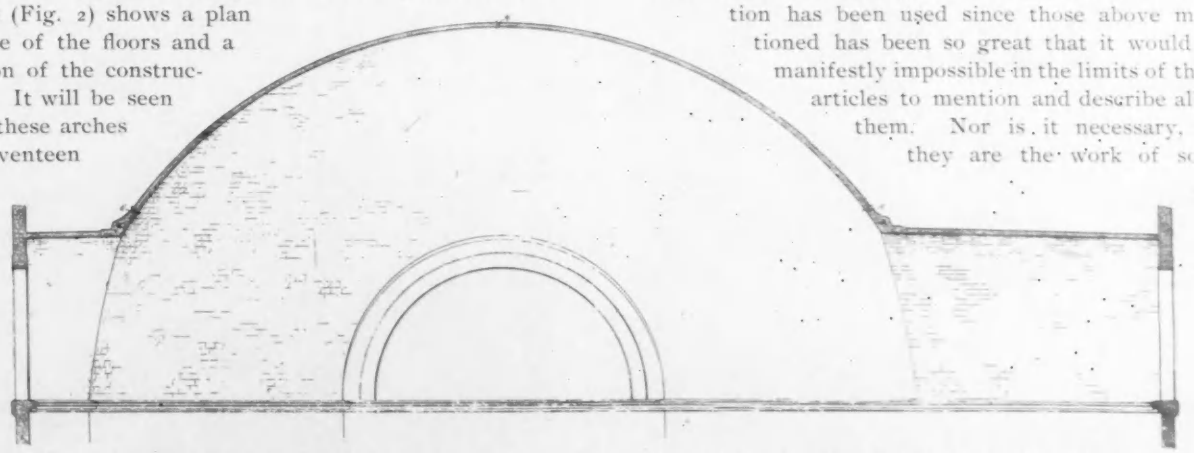


FIG. 4. SECTION THROUGH DOME, SEVENTY FEET IN DIAMETER, GRACE UNIVERSALIST CHURCH, LOWELL, MASS.

FIG. 5. DOME, EAST BOSTON HIGH SCHOOL, 70 FEET DIAMETER.

be made to arrange them in chronological order, and it will not be necessary for the purpose of these articles to give the names of the architects. In most cases they gave only the outlines of the constructions and Mr. Guastavino did the rest; such is the confidence that his work has inspired. In some, where the constructive steel used has been reduced to the minimum consistent with the performance of its office in connection with the cohesive tile work, both steel and tile work has been planned and executed by him alone.

FIG. 7. ELLIPTICAL STAIRCASE, BUFFALO GENERAL HOSPITAL.

His most remarkable and, to all appearance, daring constructions have been domes built over large areas. That which will be first selected for illustration is on Grace Universalist Church at Lowell, Mass., the exterior of which is seen in Fig. 3. The sectional drawing of this dome (Fig. 4) makes the construction clear. This dome has a span of seventy feet. Its thickness at the bearing edge is six inches, or six courses of tiles; and at the top four inches, or only four thicknesses of tile. So far it was a simple problem, but the penetrations of twenty feet each on the four sides required extraordinary precautions, accurate calculations and great care in execution. It was thought wise, as will be seen in the drawings, to insert steel angles in the intersections. The work was executed six years ago under the immediate direction of R. Guastavino, Jr., and required seven weeks to build it. The result has been entirely satisfactory.

The dome of the East Boston High School, the exterior of which is seen in Fig. 5, is sixty-eight feet

FIG. 6. BUFFALO GENERAL HOSPITAL.

in diameter, and only fifteen feet rise, while near the center it is reduced to three inches in thickness. It also was personally directed by R. Guastavino, Jr. The method of using the skeleton centering is shown, permanent radial ribs being used. Between these a curved board was set for each course of tiles, and removed as soon as the second overlapping course had been set. As a test of the quality of the work during the construction, the upper end of the ribs was lowered from time to time, to see if there was any settlement, leaving the dome self-supporting at various stages of its progress. The eight-inch dwarf walls at the angles of the octagon and the intermediate four-inch walls are shown built on the haunches of the dome to support the weather roofing, a part of which is in place.

FIG. 8. CLINIC, BUFFALO GENERAL HOSPITAL.

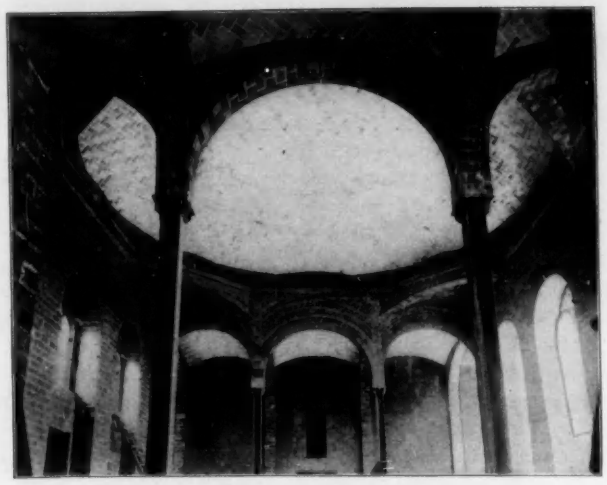


FIG. 9. LIBRARY, ST. JOSEPH'S SEMINARY.

The work in the Buffalo General Hospital is shown in three illustrations. Fig. 6 is a room with ceiling in the form of three flat domes, photographed before the plastering was done. Only two pairs of steel beams are used, which carry angle beams, forming octagons, from which the domes are built. They are so flat that the tiles are not laid concentric, but all breaking joints in the same direction. The beams are all covered with grooved tiles. Fig. 7 shows an elliptical staircase in the same building, the balustrade and risers of which are built with enameled tiles, and the walls are lined with

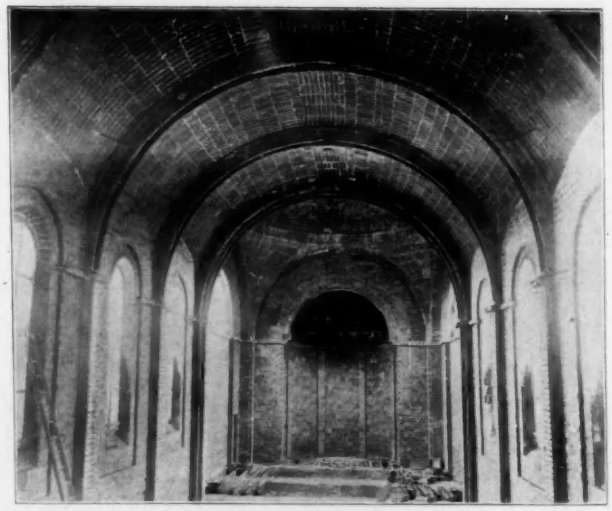


FIG. 10. CHAPEL, ST. JOSEPH'S SEMINARY.

the same. Fig. 8 is a view of the clinic room, which has a dome ceiling on pendentives. The gradients are all covered and the walls lined with enameled tiles. The elliptical stairway last shown terminates at the floor above the gradients. For thoroughly antiseptic treatment this probably surpasses any clinic room heretofore built. All the enameled tiles used are made at the factory of the R. Guastavino Company at Woburn, Mass., and are the result of much expensive experimentation in burning enameled tiles without saggers, by which process it has been possible to make large quantities in less time than formerly.

St. Joseph's Seminary is the largest and most complete example of cohesive construction ever executed. Problems of masonry engineering were encountered and solved at every turn. Our illustrations show the library (Fig. 9), the chapel (Fig. 10) and the grand staircase (Fig. 11), all as they came from the hands of the R.

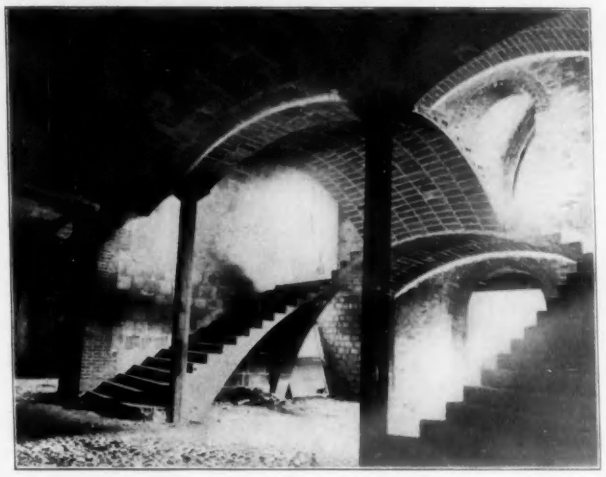


FIG. 11. GRAND STAIRWAY, ST. JOSEPH'S SEMINARY.

Guastavino Company, and before being turned over to the finishers. The library, even without any interior work or the fire-proofing of the steel columns, at first suggests the remains of some newly discovered Moresque building, as indeed it really is the modern evolution of the constructive arts of the Moresque builders. After what has been heretofore said it hardly needs further description. The chapel (Fig. 10) is a revival of the true Romanesque construction, in which, however, what

FIG. 12. MORTUARY CHAPEL, PAWTUCKET, R. I.

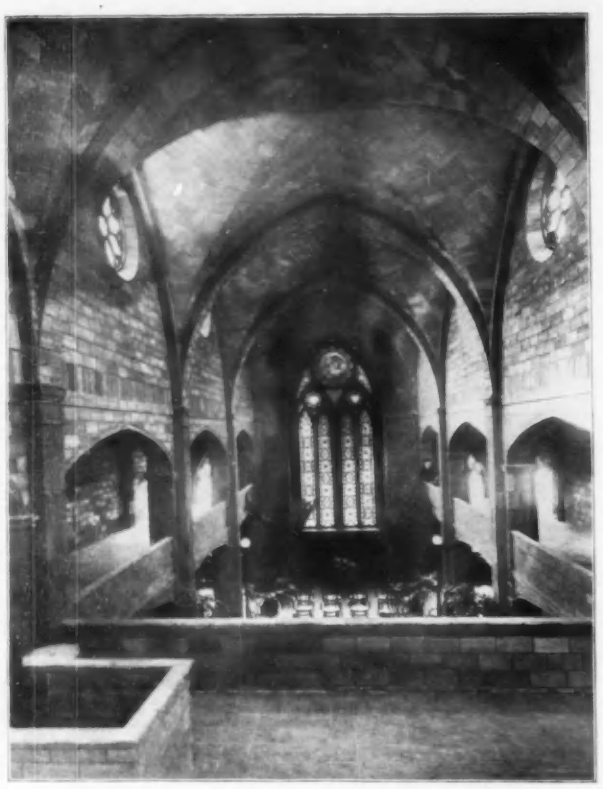


FIG. 13. CHAPEL, CREMATORY, MT. AUBURN CEMETERY, CAMBRIDGE, MASS.

appear at first to be barrel arches are in reality domical. The timbrel or cohesive construction has everywhere been applied to the Romanesque tradition. The whole effect is architectural; though without surface finish. It illustrates the little importance of finish when the construction is rational and logical. The stairway in the same building (Fig. 11) is another example of daring, though safe, construction. But perhaps the use of the word "daring" in this connection is a mistake. We call things "daring" only because at first we do not understand them. If we study awhile we will see that there is nothing daring in this work. He who made it certainly did not think it was, else he would have left it undone. The very life and soul of architecture is seen in the construction before us. It is therefore a "thing of beauty" even before the art of decoration has covered it and perhaps will injure rather than improve it, for all that we know. It all depends upon the amount of sympathy of the decorator with the constructor.

We give in Fig. 12 the interior of a mortuary chapel at Pawtucket, R. I. Here we have the old Romanesque construction reproduced almost exactly. It takes us back to reminiscences of Perigueux. Under this chapel is a crypt, all of which is finished in enameled tiles.

In the same vein, but in the style of a later historical period, is the chapel of the crematory at Mount Auburn Cemetery, Cambridge, Mass. (Fig. 13). The entire interior is of cohesive construction, but the ceiling is of groined arches with transverse and wall arches in the manner of the latter part of the twelfth century. This is the first illustration I have given of this system of construction, and it shows how perfectly the Guastavino method is adapted to it. A similar construction was illustrated in THE BRICKBUILDER for November, 1900, in the ceiling of St. Paul's (Roman Catholic) Church at Chicago; but there the transverse and wall arches as well as the groins were of molded brick, and the filling only of cohesive tile construction (executed by Paul Mueller of Chicago). Here it will be seen that the groins are dispensed with, which is possible only when the Guastavino method is used. The whole of this is a new construction within the walls of an old building. The whole

FIG. 14. PUBLIC LIBRARY, PROVIDENCE, R. I.

FIG. 15. PATERSON CITY HALL, PATERSON, N. J.

interior has architectural expression without a molding or any kind of architectural detail, and again illustrates what has been said about the stairway last referred to.

Again I show a stairway (Fig. 14). This time it is seen in process of construction. The flying arches have been built and the steps finished to the first landing only. The whole thing speaks for itself; and the picture tells us as well that the appreciation of the projectors of this building for reliable fire-proof materials and methods did not extend to the partitions.

In Fig. 15 I give a view of the entrance vestibule of the City Hall at Paterson, N. J., of which a view on the stairway was given in Part II. This shows the Guastavino construction in smooth (but not enameled) tiles, carefully set as finished work in connection with ornamental terra-cotta.

Fire-Proofing.

ANNUAL FIRE WASTE AND ITS RELATION TO FIRE-PROOF CONSTRUCTION.

BY WILLIAM COPELAND FURBER,* M. AM. SOC. C. E.

THE fire waste in the United States in the year 1900 reached the enormous amount of $130,028,489 (Standard Fire Insurance Tables). The total receipts for 169 fire insurance companies only, in the United States for the year 1900 were $164,033,656, while the total disbursements were $163,657,371; or these 169 companies paid out their entire income, less $376,285, for losses and expenses. The losses paid out in the year 1900 exceeded the losses paid out in the year 1899 by $3,000,000, although during this time there were no conflagrations; but the ordinary fires were so costly and came in such rapid succession that the receipts from the premiums and the income from investments barely met the expenses of conducting the business. As a consequence of this loss an increase in the rates is recommended as the only remedy (*The Investigator and Insurance Chart*).

A careful study of these figures of over $130,000,000 waste and an additional $34,000,000 for administration of the business of the companies will lead to the conclusion that a considerable part of this money paid out for waste and administration could have been saved by the erection of better classes of buildings.

If the actual fire waste of $130,028,489 be considered as interest paid out for the year, it would have represented an investment of $2,600,569,800 at five per cent; or in other words the actual waste would have paid interest on the use of $2,600,569,800 more as capital in business enterprises. This illustration shows clearly how much opportunity there is for the erection of better buildings. The community needs but to be educated up to the facts to realize that good business policy would dictate that the money now paid out in insurance premiums should be capitalized and this capital invested in fire-proofing their buildings.

Few people realize that all fire losses, even though fully insured, actually waste the resources of the country. It is only because the natural wealth of this country is so great that these losses have not attracted more attention.

Destruction of valuable property by fire does no one any good and leaves the country just that much poorer, and the burden of the loss is borne by the community in assessments in the shape of premiums on their insurance, which each owner is compelled to maintain, not only to protect himself against the danger of his own building becoming the origin of a fire, but also against his neighbor for a similar reason.

Moreover, fire insurance up to the full amount of the investment never covers the actual loss to the individual person or company insured, because of the disarrangement of the organization, the loss of time, the sacrifice of convenience and other things which cannot be itemized.

While it is not possible to prevent all this annual waste, because a greater part of the dwellings and small shops could not be made of fire-proof material by reason of the additional cost, yet the most expensive and disastrous fires are not in dwellings or small shops, but in the business districts of towns and cities; and it is unreasonable to suppose that owners and investors would continue to erect combustible buildings if they were better informed as to the facts and commercial advantage of fire-proof construction.

Legislation on the matter of fire-proof buildings has already been enacted in some of the large cities. The new building code of New York city provides "that any hotel, lodging house, school, theater, jail, police station or institution for the care or treatment of persons, hospital or asylum which exceed thirty-five feet in height shall be of fire-proof construction; and any other building which exceeds seventy-five feet in height shall be similarly constructed." St. Louis has a somewhat similar restriction regarding the height of combustible buildings, and it will be but a matter of time when enlightened public opinion compels the adoption of stringent regulations forbidding the erection of combustible buildings in the important business and manufacturing centers of all cities and towns.

A sharp distinction should be drawn between fire-proof and non-combustible buildings.

A fire-proof building is one that no fire within reasonable limits will affect its strength and stability.

A non-combustible building is one that will not itself furnish fuel to a fire or add to a conflagration, but is not sufficiently protected to withstand great heat without distortion or damage. Each class of building has its place in the community, and this place must be determined by the use to which the building is to be put and its exposure; but the non-combustible building should not masquerade as fire-proof, and it is to be feared that many of the so-called fire-proof buildings are simply non-combustible. The architect should make the distinction between the two very plain to his client and the public, and govern his own work accordingly. No building in which large sums of money are to be invested should be anything else than fire-proof. It is not to be supposed that intelligent bodies of men or capitalists deliberately invest large sums of money in costly buildings and then gamble on the chances of fire rendering these investments valueless or injuring them to such an extent that expensive repairs have to be made to render them habitable again; yet this is not an uncommon thing, and the blame must rest on the architect and manufacturer of fire-proof materials. No architect is justified in designing a costly building unless it is made as near fire-proof as the knowledge and ingenuity of man can make it.

The architect who permits and encourages the sinking of large sums of money in buildings which an accident or the neglect of a careless workman or servant may destroy is not a creditable member of the profession.

If only a limited amount of money is available, it is better by far to restrict the size of the building, or its facilities or ornament, than to spread out an elaborate cover upon perishable groundwork.

The responsibility of subjecting a beautiful and costly building to the possibility of destruction by reason of its inflammable construction is one that should not be lightly assumed by any designer, for it is the most inexcusable folly to lavish great sums of money upon the architectural treatment and artistic embellishment of a building which may dissolve into smoke at

* Architect and consulting engineer, 421 Chestnut Street, Philadelphia.

the least expected moment. If money is available for decoration, it should be available first of all for permanent construction.

If a painter of fame and skill portrayed his best efforts upon canvas which would rot away in a few years, he would receive and well deserve unstinted abuse; yet architects are doing a similar thing all the time, as the fire losses show. The painter's neglect would cost a waste only of his own efforts, but the architect's neglect or ignorance is the means not only of wasting his own efforts, be they great or small, but the substance of his client and part of the wealth of the community.

Much can be said on the question of the amount of the investment being determined by the possible earning power of the enterprise and in some instances prohibiting fire-proof or non-combustible construction, and this is a rational argument and should be considered in all cases, particularly where the conditions are such that the permanency of the building is problematical or maybe undesirable, or possibly when the enterprise is in a transitory stage. Then it would be folly to argue for permanent construction. But these conditions are not likely to obtain in the valuable business section of a town, and therefore these cases need not be considered in this discussion.

It may be argued in defence of the architects that the owner of the building would have it *thus and so*, and that the question of whether the building was to be combustible or fire-proof was not left to the discretion of the architect; and if this be true it argues ill for the prestige of the architect and indicates how little weight his knowledge and judgment have with his clients. The client who decides such questions without consulting his architect on the business side of the proposition shows his lack of confidence in the architect's commercial knowledge; and it must be confessed that a greater knowledge of the commercial side of the matters relating to building on the part of the architect would result in better architecture and the rational treatment of many questions which are now determined by the whim or fancy, prejudice or ignorance of the architect or his client.

If all buildings were constructed in a better manner, and if all the designers of buildings were intelligent and conscientious and actuated by true public policy, and if farsighted owners of real estate were educated up to the facts, then those people who now for their own temporary gain erect dangerous and inflammable buildings would be compelled by laws passed in obedience to an enlightened public opinion to erect non-combustible buildings, and the money which is now annually spent in repairing preventable losses could be applied to better uses.

Upon the question of fire-proof buildings of the best class much remains to be said. When the amount of the investment in a modern high building is considered and the little or inadequate study given to the question of fire-proofing is borne in mind it is surprising that capitalists and investors have been contented so long with the perfunctory way in which this matter has been treated by the architects.

The stability of the structure is wholly dependent upon the integrity of the ironwork, and ordinary prudence dictates that nothing which can be done within reason to insure this integrity should be left undone. The wealth of marbles, mosaics, wrought metals, rigid and plastic ornament and the elaborate cabinet work are often squandered if any precaution has been neglected to keep the structure safe from the distorting and destroying effects of fire and the insidious work of corrosion.

The investment of large sums of money in monumental buildings cannot be considered wise or in line with true public policy unless the buildings are permanent, and they cannot be considered permanent unless they are fire-proof and rust-proof.

FIRE LOSSES.

In the last bulletin of the American Statistical Association Dr. Samuel W. Abbott, the secretary of the state board of health, gave certain interesting facts concerning the fires in European cities, statistical data which should have a bearing upon our American methods of meeting and lessening our annual fire losses. The tendency in the Old World, as in the New, is toward the annual occurrence of a larger number of fires. We are all the time increasing the number of commodities used that are either susceptible of spontaneous combustion or of easy ignition. The use that we make of chemical compounds of various kinds which may be productive of fire is far greater than the use thus made by our forefathers, while gas, electricity and a number of other heating and lighting devices are the causes in all parts of the world of a large number of fires. The difference between our experience and that of cities and towns of continental Europe is that while in the United States the amount of loss by fire remains tolerably uniform, so that as more fires occur in a year there is a much larger annual loss by fire, in Europe, while the number of fires occurring, when the size of a city is taken into account, are frequently as great as the number experienced in American municipalities, the loss ratio per fire tends steadily downward, and even the aggregate loss by fires in a municipality has a downward tendency in spite of their growth in numbers. Dr. Abbott has said, as a matter of personal experience, that when a few years since he visited the fire department at Venice he found that it consisted of an ordinary hand engine which was placed in a small room under the Ducal Palace, and that while the city had a population of nearly 200,000 the annual reports showed that the fire losses were not over $20,000 a year. The statistics which he has gathered indicate that in Milan, with a population of nearly half a million, the total fire losses for the last ten years have averaged less than $150,000 a year. In this instance the city is one about the size of Boston, is a large industrial center, and yet its fire losses, as compared with those of Boston, are about as ten cents is when compared to one dollar. Budapest has a population considerably larger than Boston. It is, perhaps, the most important manufacturing center in eastern Europe, and yet the average fire losses for a number of years past at this Hungarian capital have been not much larger than the fire losses of Milan. The city of Paris, with a population of over two and one half million, has had a fire loss for a number of years past approximating somewhat near to that of Boston. In 1895 the fire loss was about $2,500,000, but in 1898 it was less than a million dollars, these representing the extremes for a number of years. — *Boston Herald.*

Selected Miscellany.

NOTES FROM NEW YORK.

The real-estate journals are predicting a record-breaking fall and winter in realty transactions, and we are all confidently looking forward to such a condition

WARREN AVENUE ENGINE HOUSE, BOSTON, MASS.
John A. Fox, Architect.

of affairs. The past two months, although usually very quiet, and this year unusually hot and disagreeable, have been marked by a steady increase of business among architects and builders.

So long as the country continues in a state of prosperity and prices in the iron trades are held firm, so long as millionaires from all sections of America insist on residing and building in our midst and scattering the

DETAILS BY WILLIAMSON & CROW, ARCHITECTS.
Indianapolis Terra Cotta Company, Makers.

HOUSE BY J. W. DOW, ARCHITECT, WYOMING, N. J.

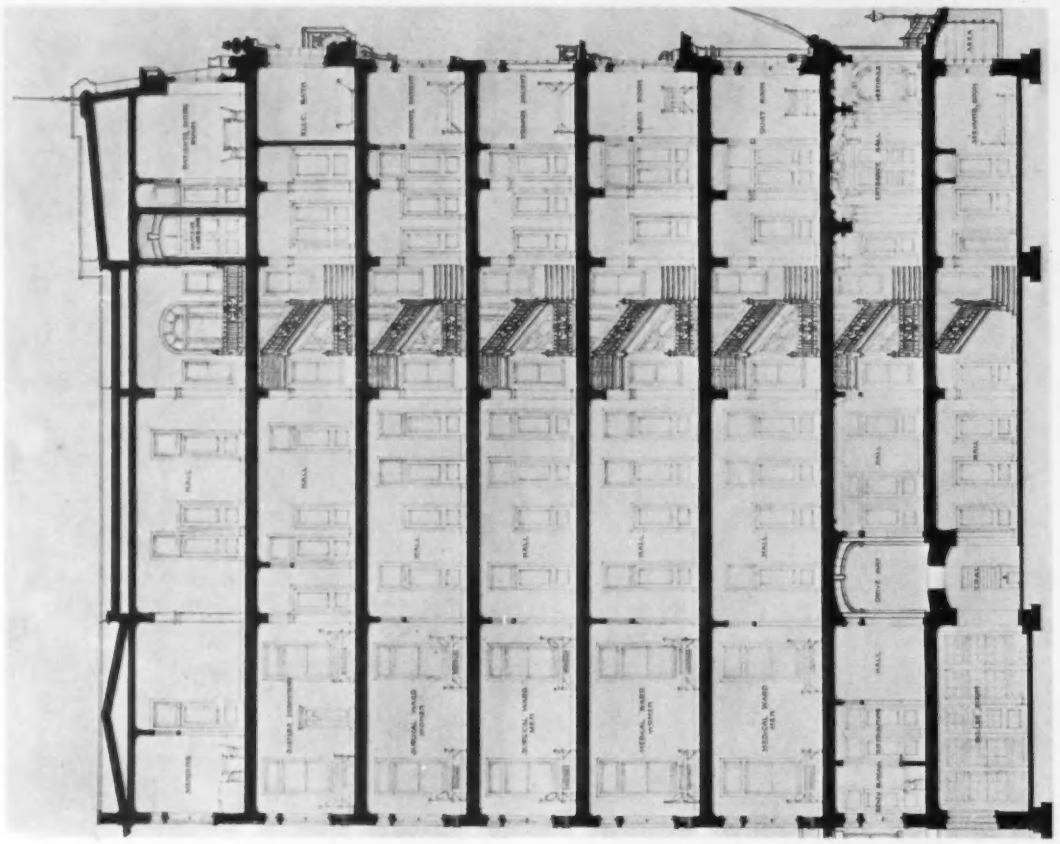
accumulations of recent years, so long will the architects and builders share in the good things of the day.

Work on the new Custom House has progressed so that the foundations now nearly reach the street. Special provision is to be made for water-proofing of

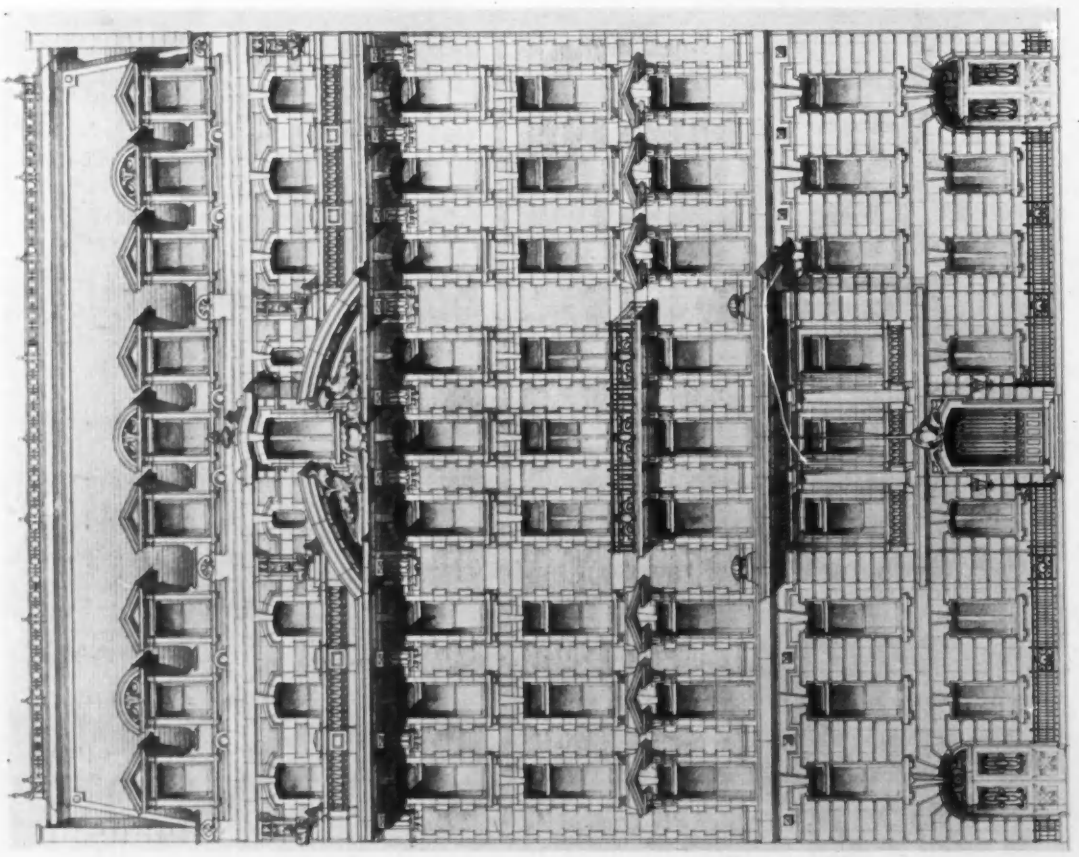
ARMORY, MEDFORD, MASS.
Shepley, Rutan & Coolidge, Architects.
Roof covered with Celadon Roofing Tile.

the sub-basement, owing to its situation at tide water. Granite composes the stonework of the basement. The material for the superstructure has not yet been decided

RESIDENCE, ST. LOUIS, MO.
George W. Hellmuth, Architect.
Built of Hydraulic-Press Brick.

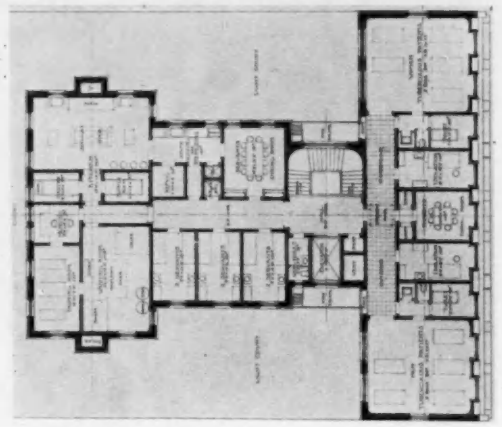


LONGITUDINAL SECTION.

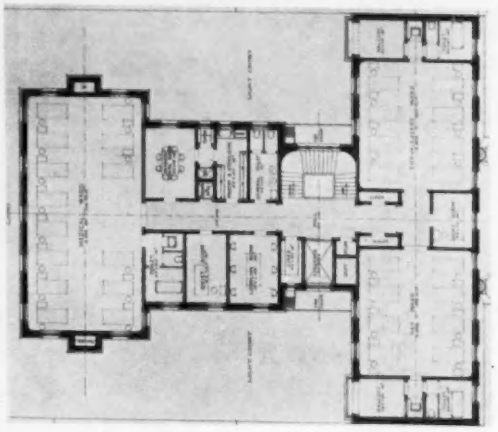


FRONT ELEVATION.

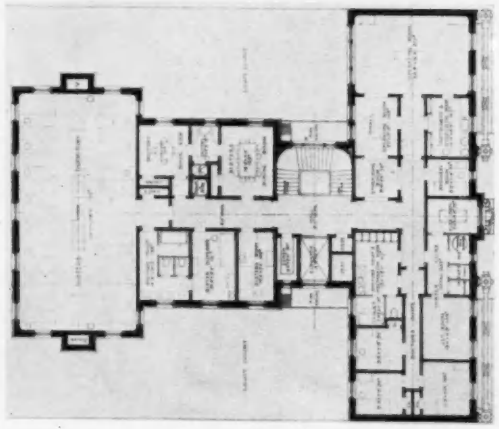
ACCEPTED DESIGN FOR NEW FRENCH HOSPITAL, NEW YORK CITY.
Welch, Smith & Provot, Architects.



SEVENTH FLOOR.



THIRD FLOOR. WOMEN PATIENTS.



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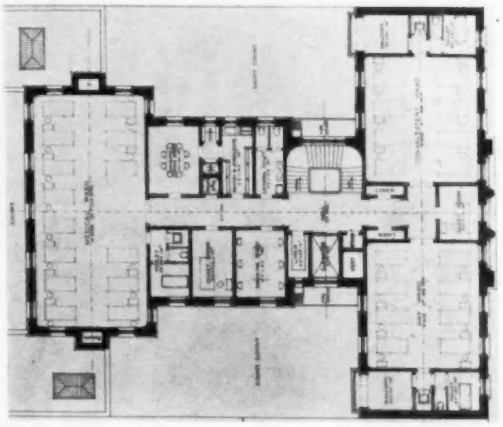
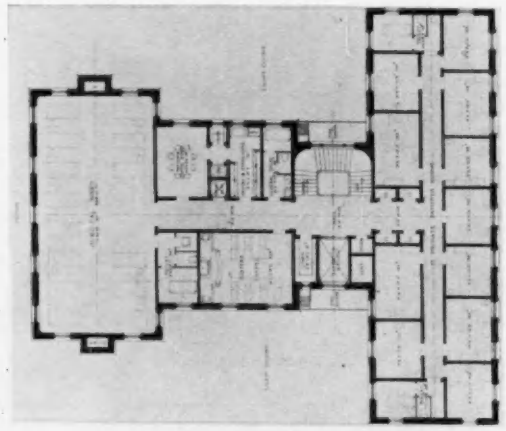
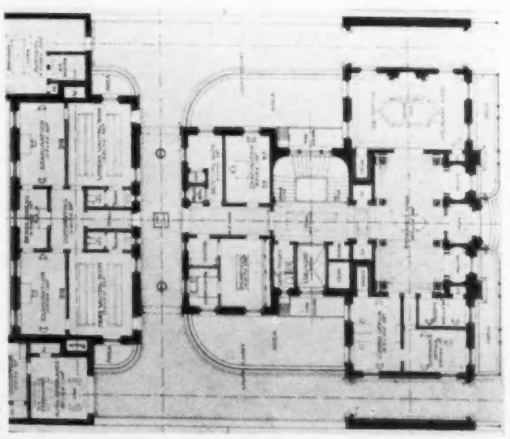


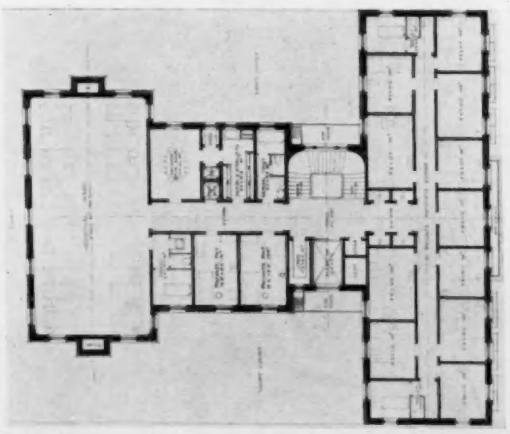
SECOND FLOOR. MEN PATIENTS.



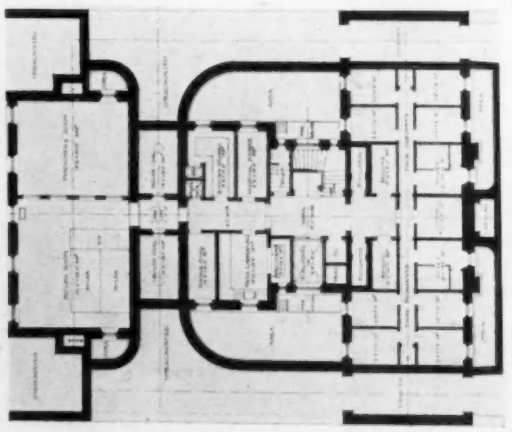
FIFTH FLOOR. WOMEN PATIENTS.



GROUND FLOOR.



FOURTH FLOOR. MEN PATIENTS.



BASEMENT.

NEW FRENCH HOSPITAL, NEW YORK CITY.
Welch, Smith & Provot, Architects.

upon, and will not be until bids for the same, which will be advertised for this month, are received. The entire building will cost about $3,000,000.

Mr. Cass Gilbert is also the architect for the new building of the Union Club at Fifth Avenue and 51st Street. The work has progressed nearly through the second story.

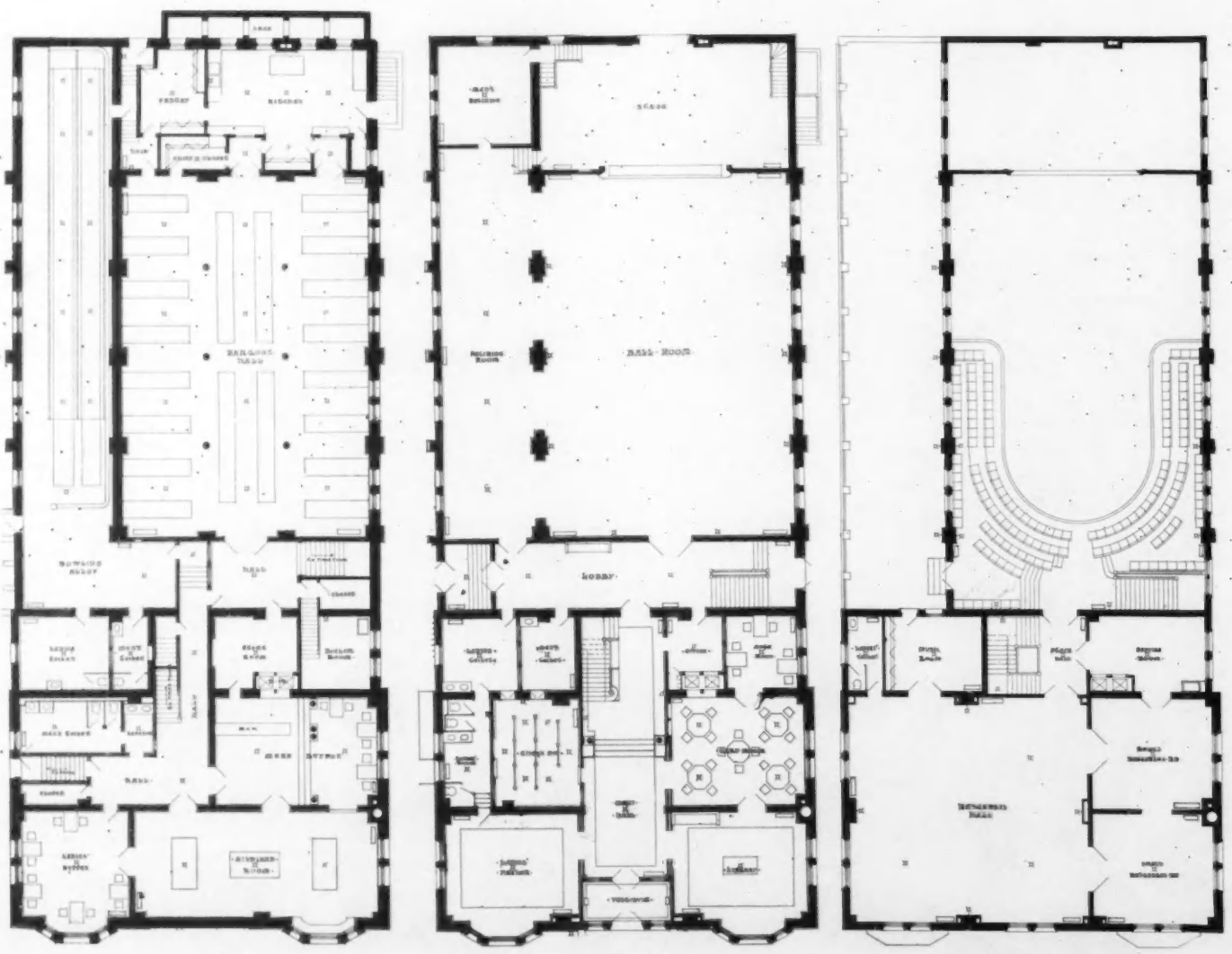
Caissons are being sunk for the foundations of the new Stock Exchange.

Mr. Bruce Price is completing a residence for Mr. Samuel Thorne on Fifth Ave. It will be one of the most beautiful buildings in the city.

Just at present the people of New York are being treated to a surfeit of real-estate news. The *Herald* a few weeks ago began the publication of a real-estate supplement every Wednesday, which immediately proved successful and interesting, so much so that one of the "yellow" journals inaugurated the same institution, which appears upon the same day and closely copies the *Herald* supplement. They are both fully illustrated and very complete.

At present the outlook for the completion of the underground rapid-transit road within contract time is bright, and work on the new steel East River bridge is being rapidly pushed.

CLUBHOUSE FOR THE CLEVELAND GESANG VEREIN, CLEVELAND, O.
Frederic W. Streibinger, Architect.



PLANS, CLEVELAND GESANG VEREIN, FREDERIC W. STREIBINGER, ARCHITECT.

The Brooklyn Rapid Transit Company are about to begin the erection of a $100,000 car barn. It will be built of brick and fire-proof materials.

Another handsome apartment is the Dorilton now being erected at Broadway and 71st Street, from plans by Janes & Leo, architects. It is a twelve-story building in modern French Renaissance style, and is finished most elaborately. There are forty-eight apartments, trimmed in mahogany, oak, white enamel and bird's-eye maple. On top of the building there are two sun parlors and a roof garden. No expense has been spared to make it one of the finest apartments in the city, and apartments will rent for $1,500 to $3,500 a year.

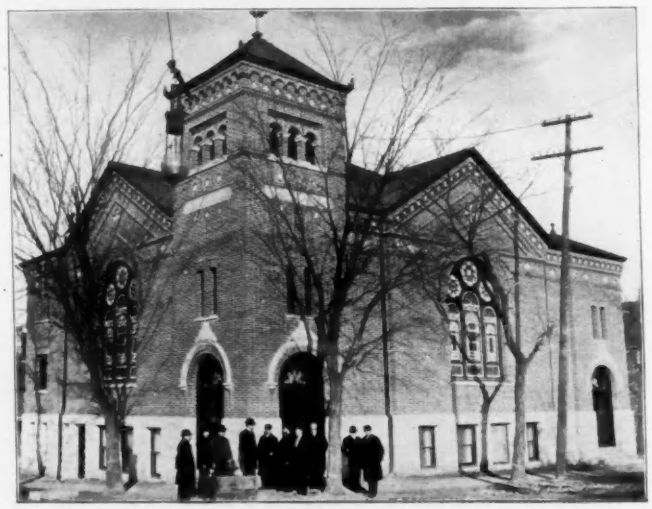
DETAIL FOR MANTEL. GEORGE B. POST, JR., ARCHITECT.
Perth Amboy Terra Cotta Company, Makers.

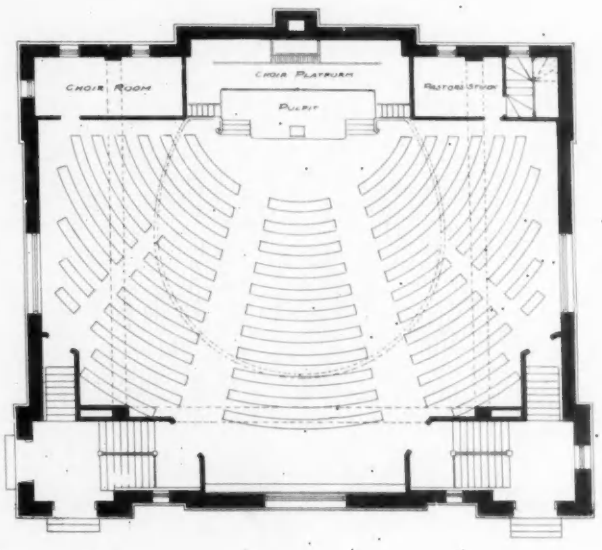
The profession has suffered a decided loss in the recent death of Mr. John R. Thomas, a successful and well-known architect, whose latest work, which was well under way at the time of his death, promised to be a fitting memorial, but as it seems likely that an incompetent firm of political architects will be called upon to complete the work, we fear greatly for the final effect. I refer to the magnificent new Hall of Records on Chambers Street.

SUNDRY ITEMS.

While the drawings of St. Leo's Church, Maginnis, Walsh & Sullivan, architects, published in last month's number, indicate that limestone was used in connection with the brick in construction, it is nevertheless a fact that terra-cotta was finally chosen in place of the stone, the Excelsior Terra Cotta Company having furnished same.

A wall about forty-five feet long and twelve feet high, of white enameled brick glazed on the flat, is laid up as a facing for the partition wall required by the board of underwriters between the rear of the switchboard of the General Electric Company and the rear wall of the Electrical Building at the Pan-American Exposition. This wall was made necessary on account of the high voltage (10,000 volts) at which the current is received by the transformers of the General Electric Company to be converted into lower voltage for use in the exhibition grounds. The brick used in this wall was manufactured by the American Enameled Brick and Tile Company of New York City. Within the enclosure of the General Electric Company there are exhib-





MISSION TABERNACLE, MOLINE, ILL.
O. Z. Cervin, Architect.

GATE LODGE FOR JOHN D. ROCKEFELLER, CLEVELAND, OHIO.
Charles W. Hopkinson, Architect. Roof covered with American S. Tile.

SPANDREL BY WILLIS G. HALE, ARCHITECT.
Conkling, Armstrong Terra Cotta Company, Makers.

ited samples of the brick used in the wall, and architects, engineers and builders desiring same will be supplied from the home office if they will enter their names in the register kept on hand for that purpose.

The American Enameled Brick and Tile Company have made extensive additions to their plant at South

DETAIL BY HARDE & SHORT, ARCHITECTS.
Excelsior Terra Cotta Company, Makers.

River, N. J.; and now have special facilities for the manufacture of arches and special-shaped brick.

The New Jersey Terra Cotta Company report a very prosperous year, having furnished architectural terra-

"THE AUGUSTA," WASHINGTON, D. C.
A. B. Heaton, Architect.

cotta for many prominent buildings around New York, of which a number are mentioned here: Addition to bank building, Red Bank, N. J., Joseph Swannel, architect. Residence, Spruce Street, Newark, N. J., J. H. & W. C. Ely, architects. Mercantile building, West 8th Street, New York City, Clinton & Russell, architects. Brewery buildings, West Hoboken, N. J., C. F. Terney, architect. Hospital building, Jefferson Street, New York

HOUSES, RIVERSIDE DRIVE, NEW YORK CITY.
Janes & Leo, Architects. Terra-cotta made by the New York Architectural Terra Cotta Company.

City, Flemer & Koehler, architects. Seventeen apartment houses, West 140th Street, New York City, John Hauser, architect. Four apartment houses, West 141st Street, New York City, John Hauser, architect. Mercantile building, Academy and Halsey Streets, Newark, N. J., Herman Kreitler, architect. Four apartments, West 112th Street, New York City, Charles Stegmayer, architect.

The plant of the Atlantic Terra Cotta Company of New York has been very largely increased, and it now ranks as one of the largest companies in the United

DETAIL BY THOM & WILSON, ARCHITECTS.
White Brick and Terra Cotta Company, Makers.

STAR LAUNDRY BUILDING, MINNEAPOLIS, MINN.
F. B. & L. L. Long, Architects.
Architectural terra-cotta made by American Terra Cotta and Ceramic Company. "Ironclay" brick made by Columbus Face Brick Company.

States. The dull enamel, of which it is making a specialty, has been very highly commended by architects and contractors.

The Flatiron Building at 22d and 23d Streets, Fifth Avenue and Broadway, New York City, calls for a larger tonnage than any building heretofore erected in New York City.

The company is now furnishing terra-cotta for the following buildings: Office building, Cedar and Liberty Streets, New York City, John T. Williams, Jr., architect. Martinique Apartment Hotel, Broadway and 33d Street, New York City, H. J. Hardenburgh, architect. Office building, Euclid Avenue and Erie Street, Cleveland, Ohio, Levi T. Scofield, architect. Office building, corner Smithfield and Water Streets, Pittsburg, Pa.,

DETAIL, EXECUTED IN WHITE TERRA-COTTA,
by the New Jersey Terra Cotta Company.

HOUSE AT CHEYENNE, WYO.
W. E. Fisher, Architect.

James T. Steen, architect. New Runkle School, Brookline, Mass., Peabody & Stearns, architects. Elks' Clubhouse, Youngstown, Ohio, Owsley & Boucherle, architects. Stable for Craig Biddle at Radnor, Pa., Peabody & Stearns, architects. Calvert Bank Building, Baltimore, Md., Joseph Evans Sperry, architect. Dayton Building, Nicollet Avenue, Minneapolis, Minn., Charles S. Sedgwick, architect. Residence, Seabright, N. J., Carrere & Hastings, architects. Power station, Western

DETAIL FOR THE FLATIRON BUILDING,
NEW YORK CITY.
D. H. Burnham & Co., Architects.
Atlantic Terra Cotta Company, Makers.

Avenue, Cambridge, Mass., Sheaff & Jaasted, architects. Westminster Savings Bank Building, Westminster, Md., J. C. Gott, architect. Office building, corner Atlantic and North Carolina Avenues, Atlantic City,

DETAIL BY H. C. KOCH & CO., ARCHITECTS.
Northwestern Terra Cotta Company, Makers.

N. J., Newman, Woodman & Harris, architects. Theatre, corner Tremont Street and Van Rensselaer Place, Boston, Mass., J. M. Wood and J. G. Howard, associate architects. Bank building, Marietta, Ohio, E. C. & G. C. Gardiner, architects. Arcade Building, corner Woodward and Washington Avenues, Detroit, Mich., Donaldson & Meier, architects. Carnegie Library, Beaver Falls, Pa., F. J. Osterling, architect. St. Anthony's Church, Detroit, Mich., Donaldson & Meier, architects. Office building, Farrar and Farmer Streets, Detroit, Mich., A. C. Varney & Co., architects. Physics Building for University of Minnesota, Minneapolis, Minn., Charles R. Aldrich, architect. Flatiron Building, 22d and 23d Streets, Fifth Avenue and Broadway, New York City, D. H. Burnham & Co., architects. Building for Mrs. Ellen P. Stevens, Detroit, Mich., Donaldson and Meier, architects. Building for Virginia-Carolina Chemical Company, Richmond, Va., M. J. Dimmock, architect. Charlotte Williams Hospital, Richmond, Va., Fuller & Pitcher, architects. Flannery apartments, Pittsburg, Pa., F. J. Osterling, architect. Keystone Bank Building, Pittsburg, Pa., MacClure & Spahr, architects.

The formation of an architectural club among the draughtsmen of San Francisco is about to be consummated. Mr. August G. Headman is an enthusiastic supporter of the movement, and says that the idea is heartily approved by all the draughtsmen who have been approached, and the club will receive the sanction and support of the architects of the city. The Builders' Exchange have voted their meeting hall for the use of the club, and the first meeting will be held about the middle of the present month at that place.

VARICK STORES, NEW YORK CITY.
Charles C. Haight, Architect.
Built of gray mottled brick, made by Sayre & Fisher Company.

"School Architecture."

A General Treatise on Designing and Planning of Schoolhouses.

BY EDMUND M. WHEELWRIGHT.

More than 250 Illustrations of Schoolhouses and Plans; many of the best types of all grades having been chosen.

An indispensable Text-book for Schoolhouse Designers.

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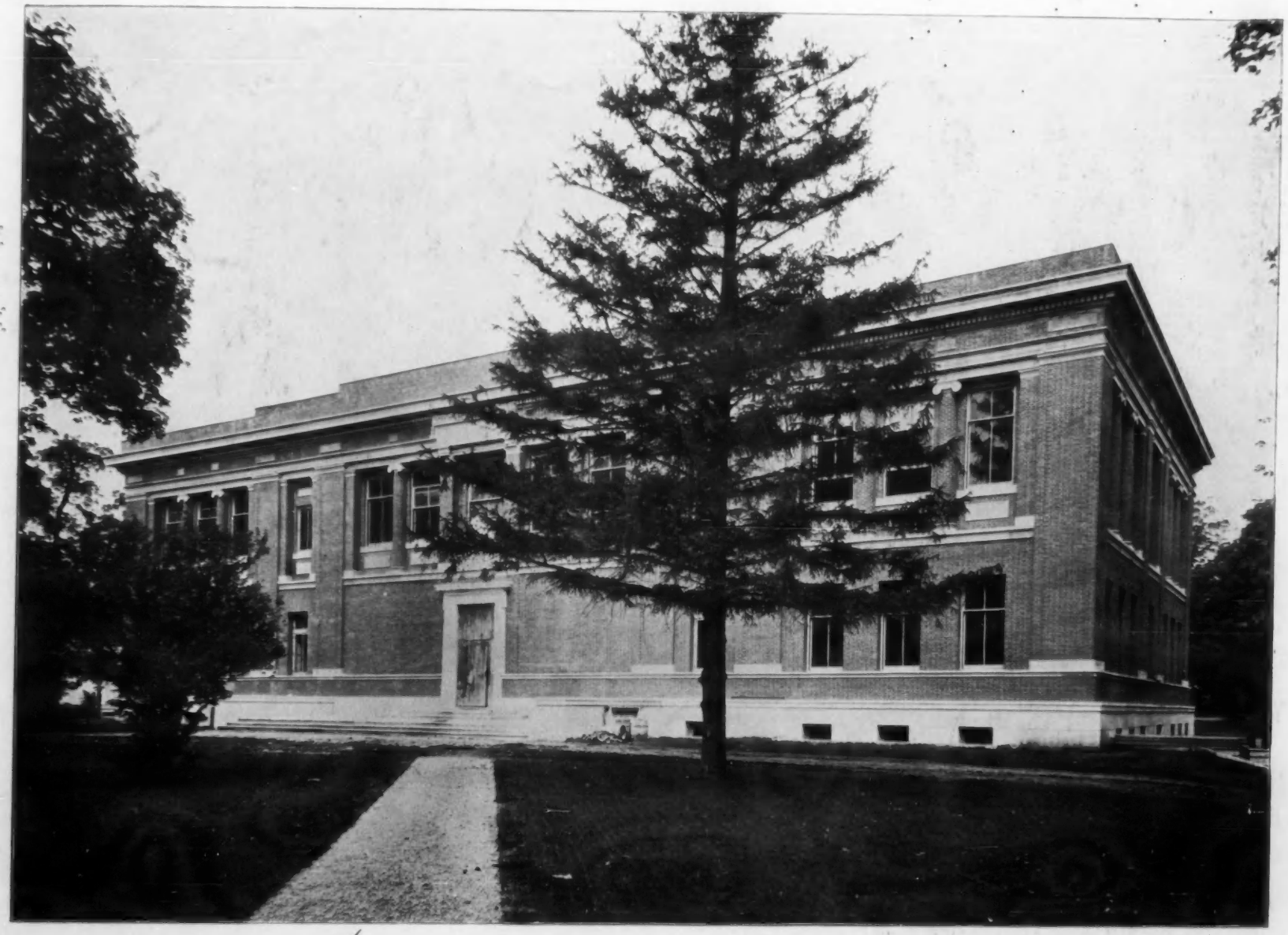
NOW

FRONT ELEVATION.

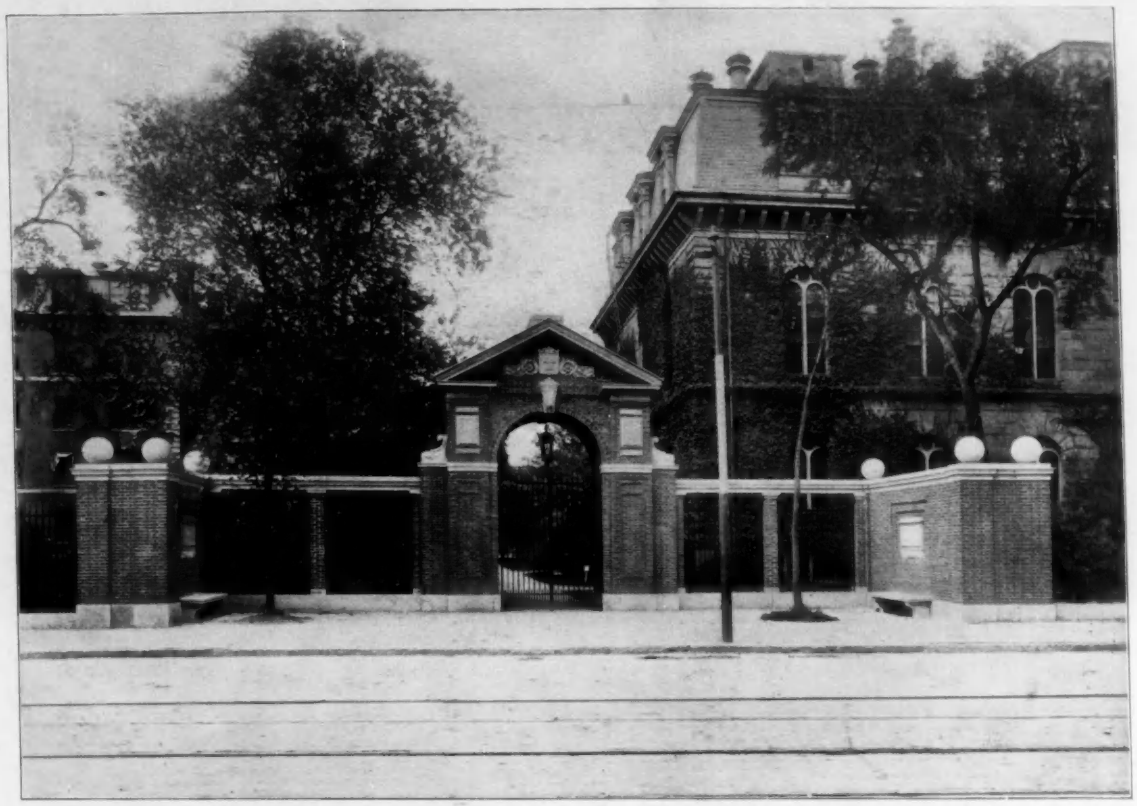
THE HARVARD UNION, HARVARD UNIVERSITY.

McKIM, MEAD & WHITE, ARCHITECTS.

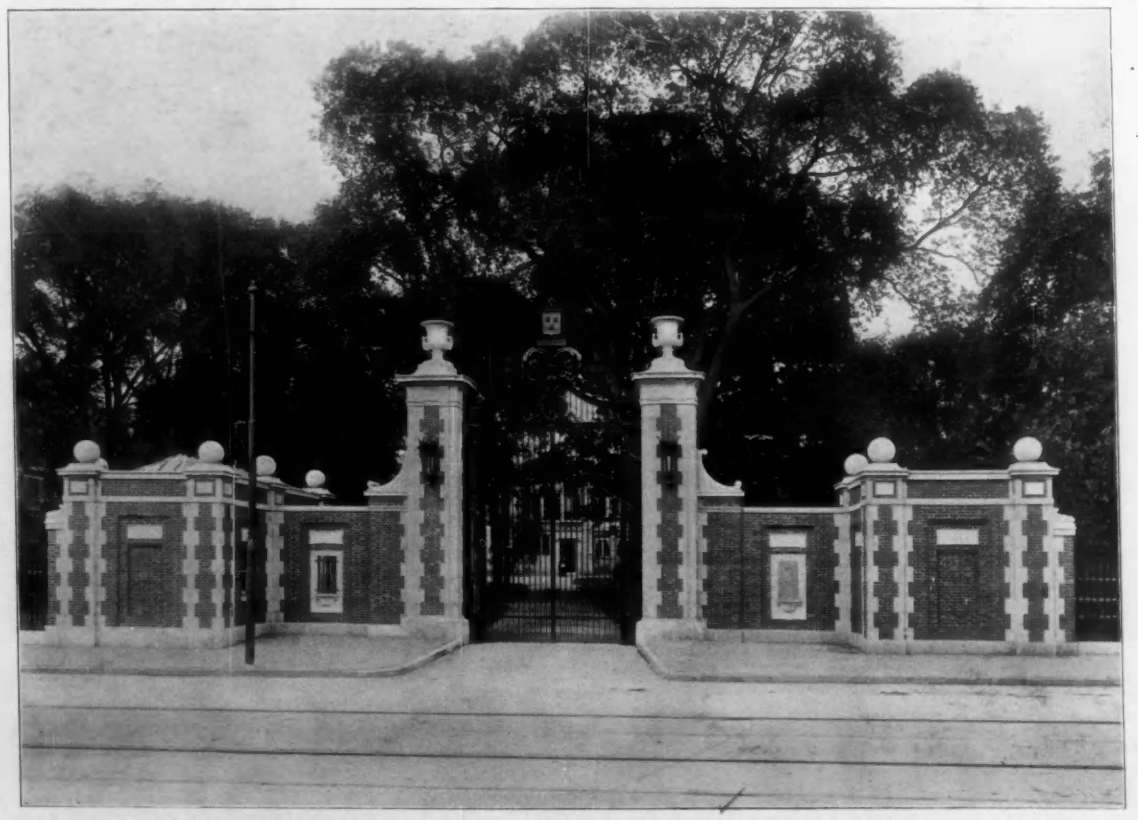


ARCHITECTURAL BUILDING, HARVARD UNIVERSITY.

McKim, Mead & White, Architects.



THE McKEAN MEMORIAL GATE, HARVARD UNIVERSITY.



MEMORIAL GATE, CLASS OF 1877, HARVARD UNIVERSITY.
McKIM, MEAD & WHITE, ARCHITECTS.

MEMORIAL GATE, CLASS OF 1875, HARVARD UNIVERSITY.

MEMORIAL GATE, CLASS OF 1857, HARVARD UNIVERSITY.
McKim, Mead & White, Architects.

PHILLIPS BROOKS HOUSE, HARVARD UNIVERSITY.

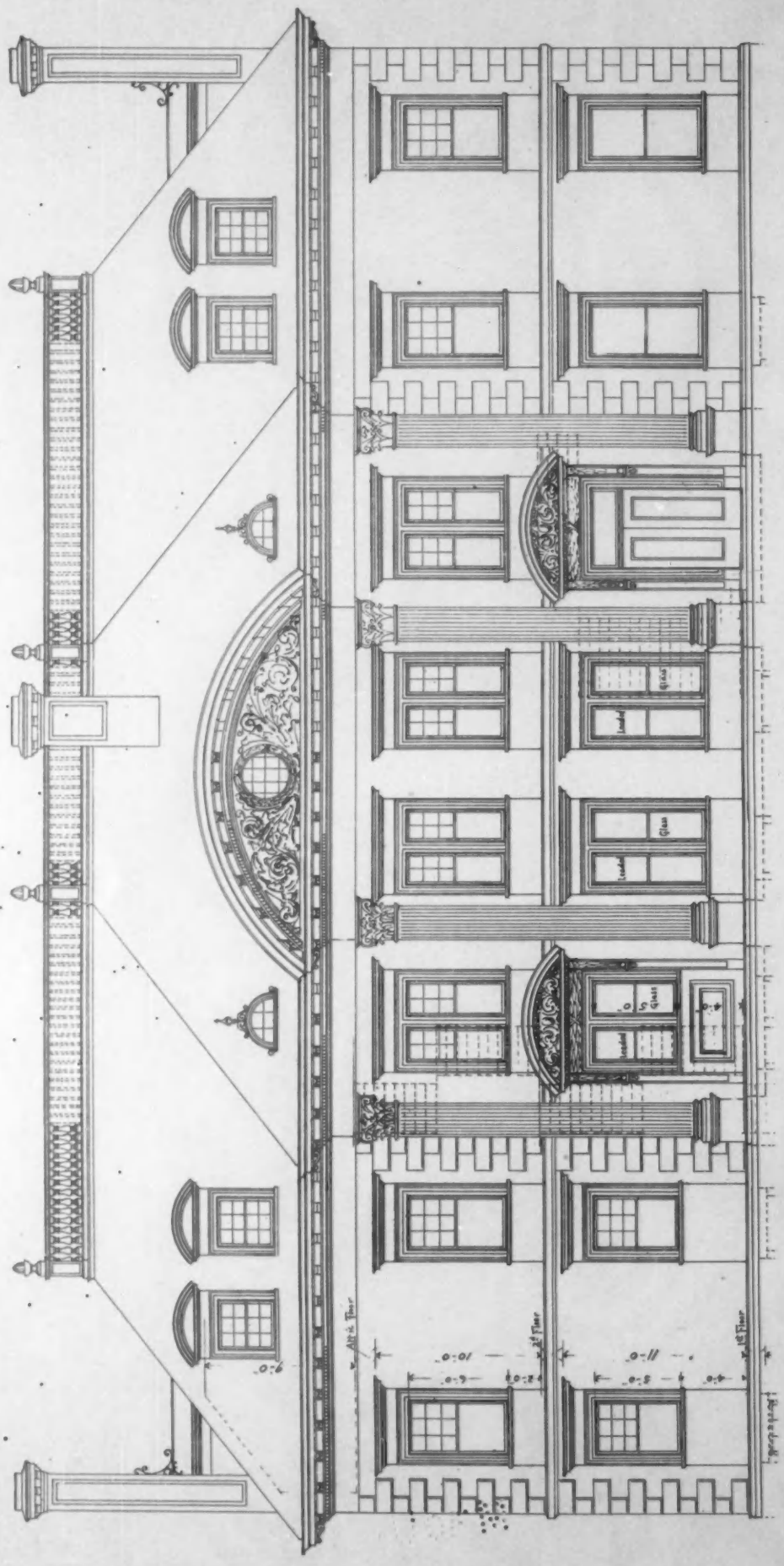
A. W. LONGFELLOW, ARCHITECT.

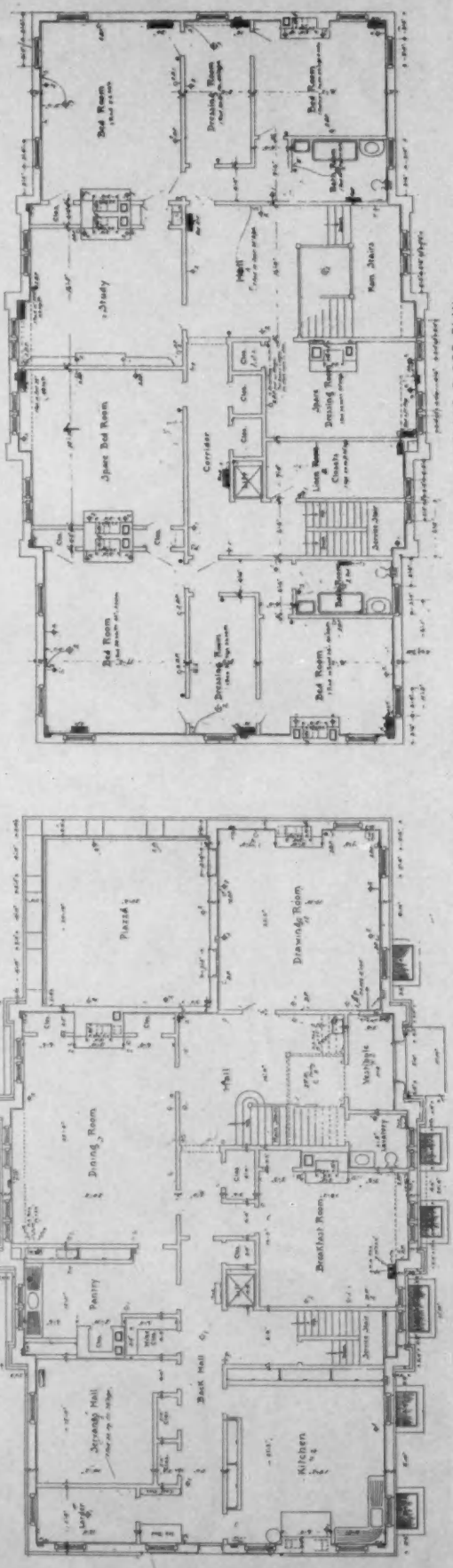
ПОЛЯ

STILLMAN INFIRMARY, FOR HARVARD UNIVERSITY.

SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS.

ПОЛИ



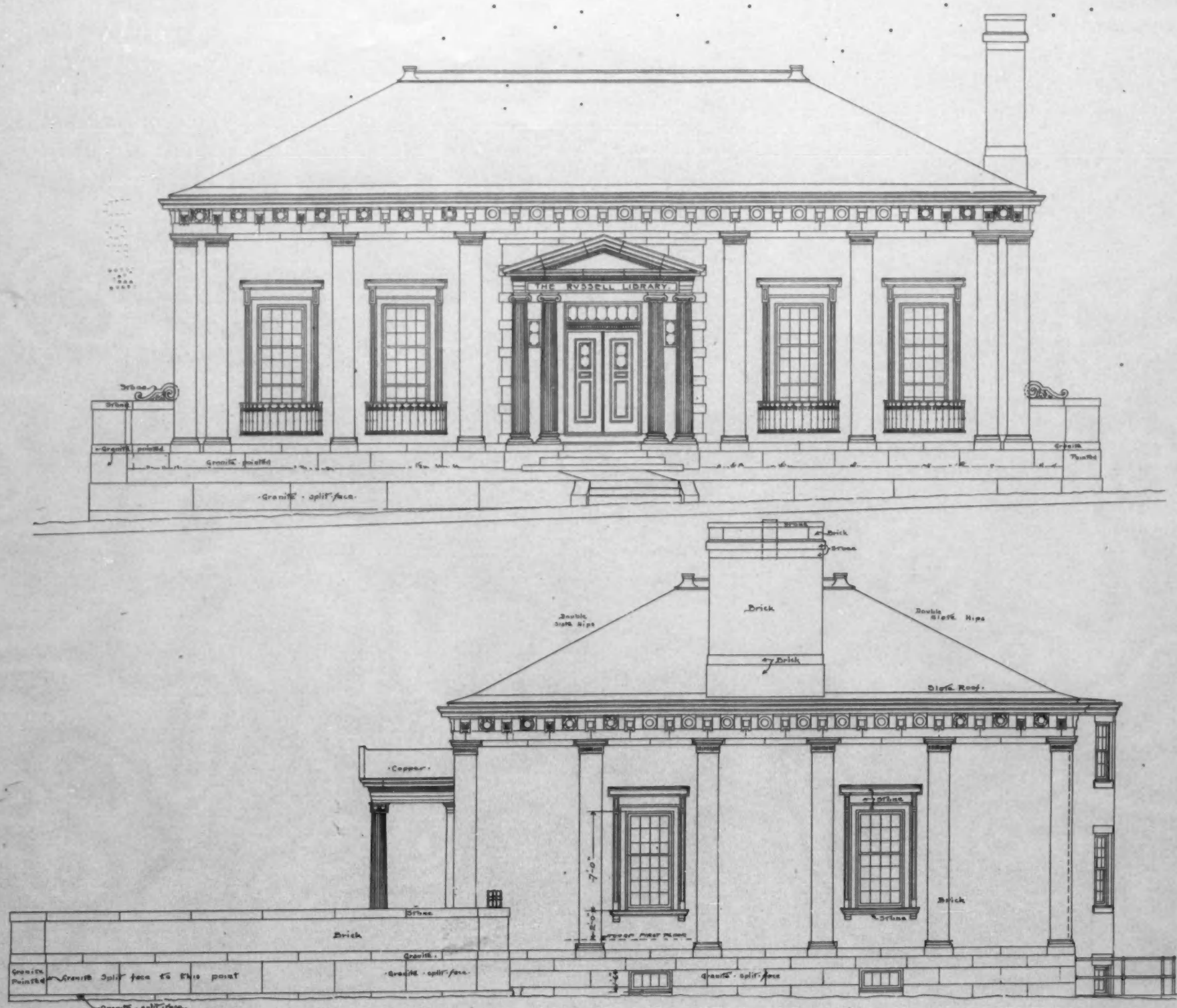


SECOND FLOOR PLAN.

FIRST FLOOR PLAN.

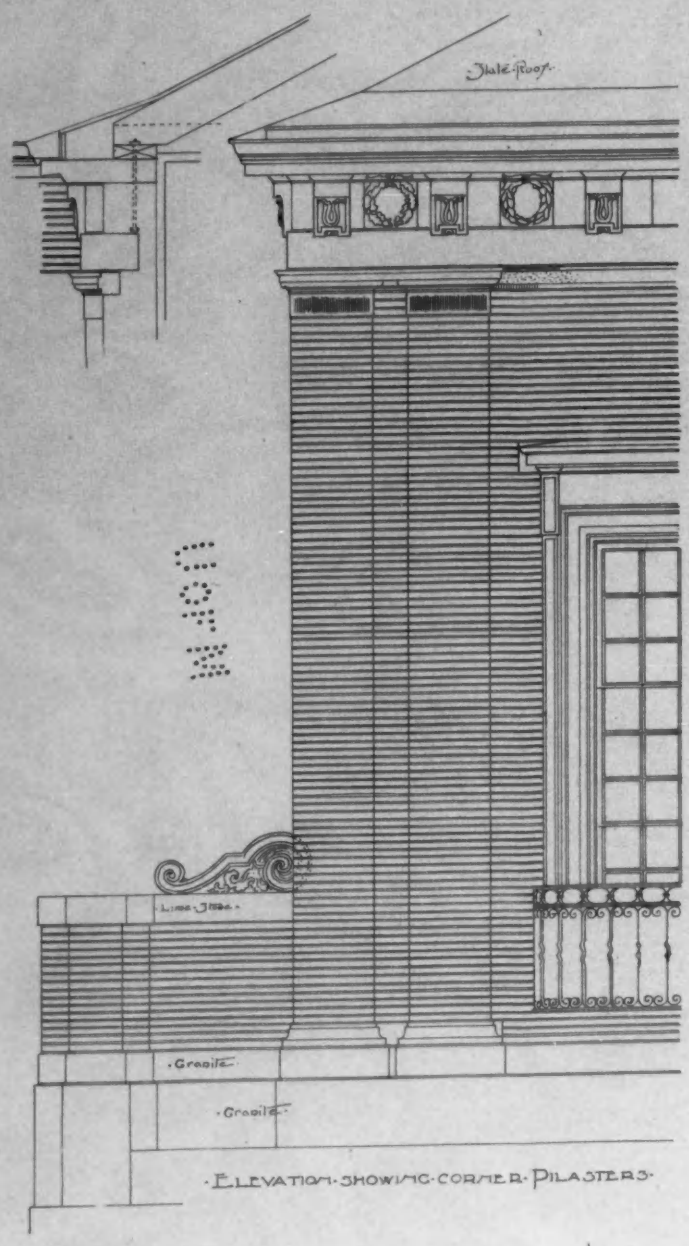
HOUSE AT TUXEDO PARK, N. Y.

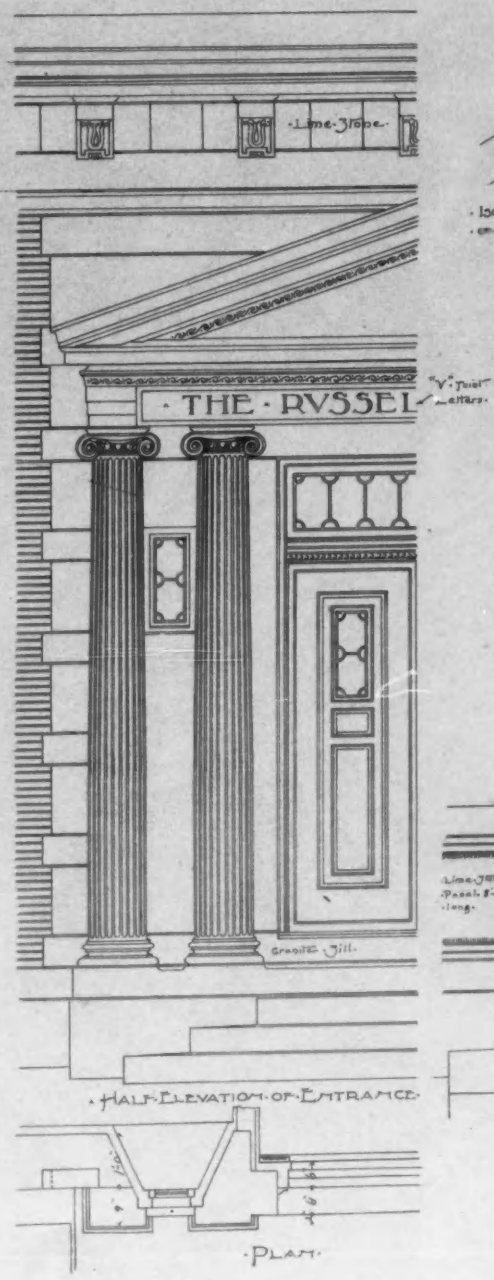
JAMES BROWN LORD, ARCHITECT.

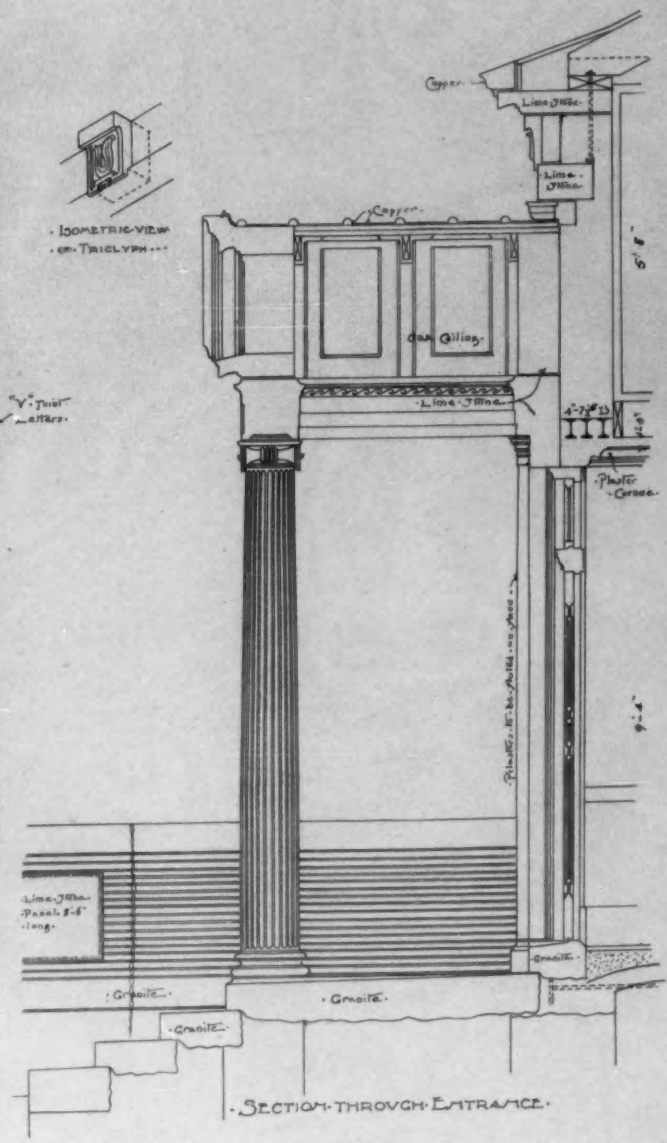


THE RUSSELL LIBRARY, PLYMOUTH, MASS.

EVERETT & MEAD, ARCHITECTS.





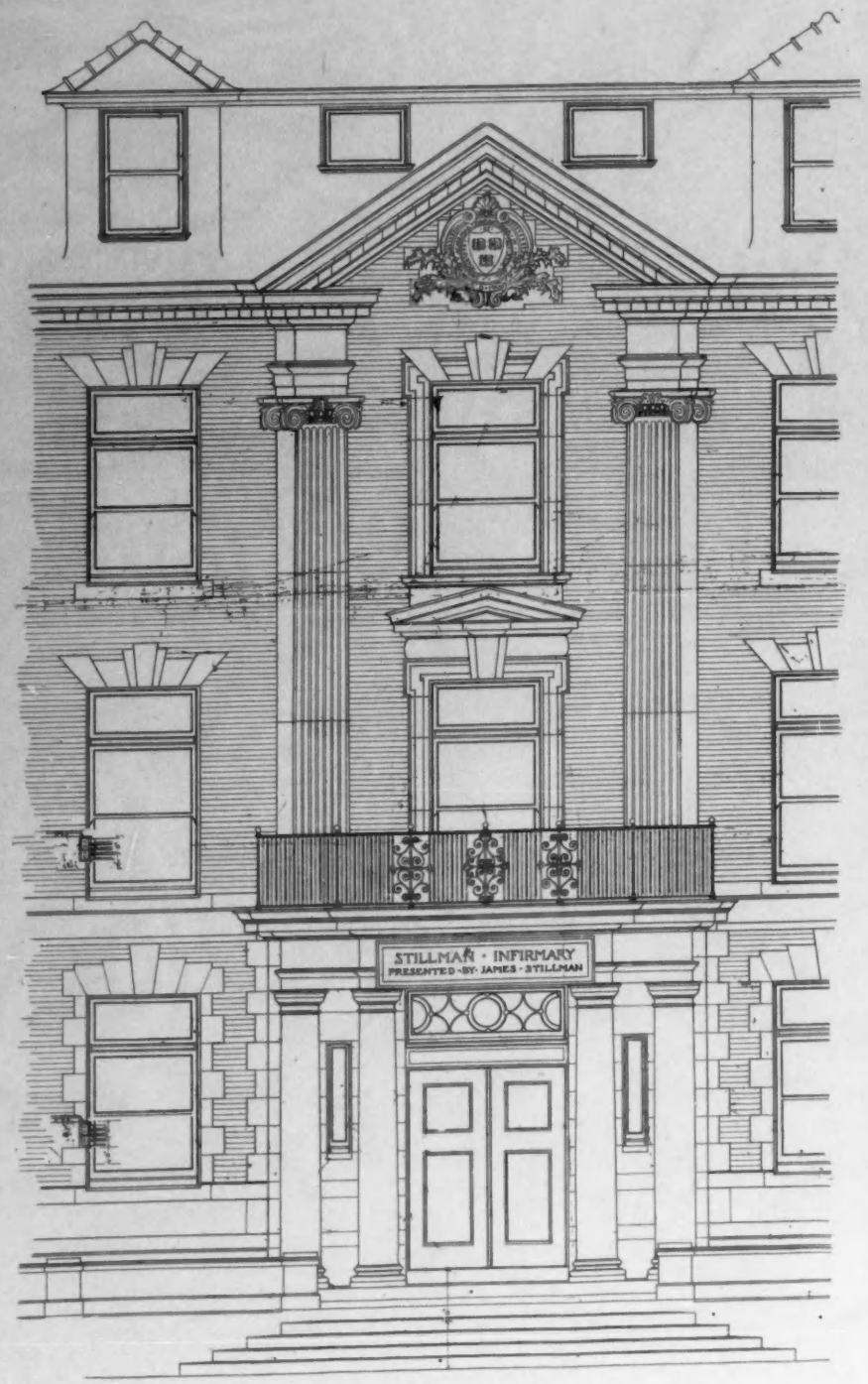


THE RUSSELL LIBRARY PLYMOUTH, MASS.

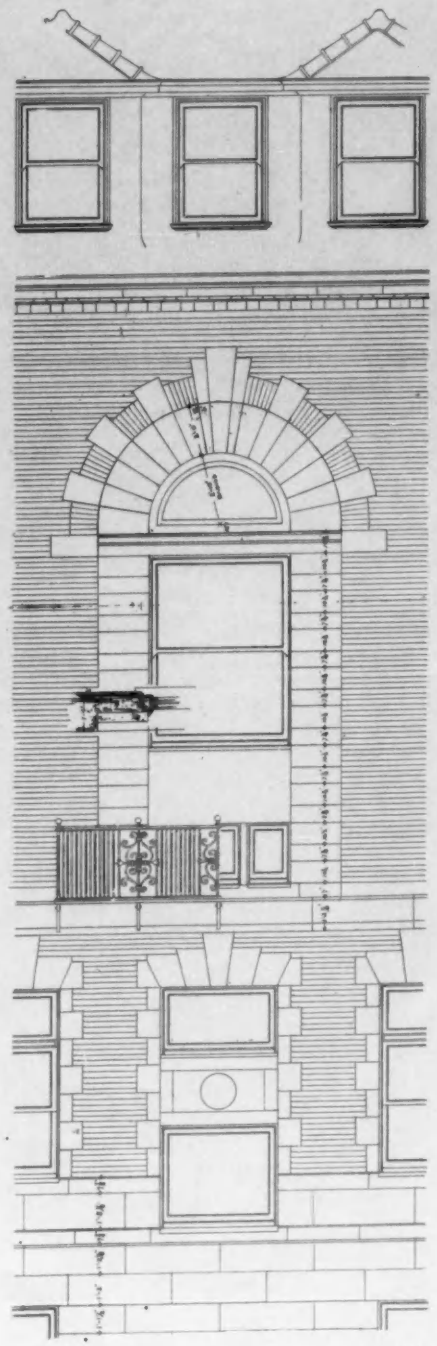
EVERETT & MEAD, ARCHITECTS.

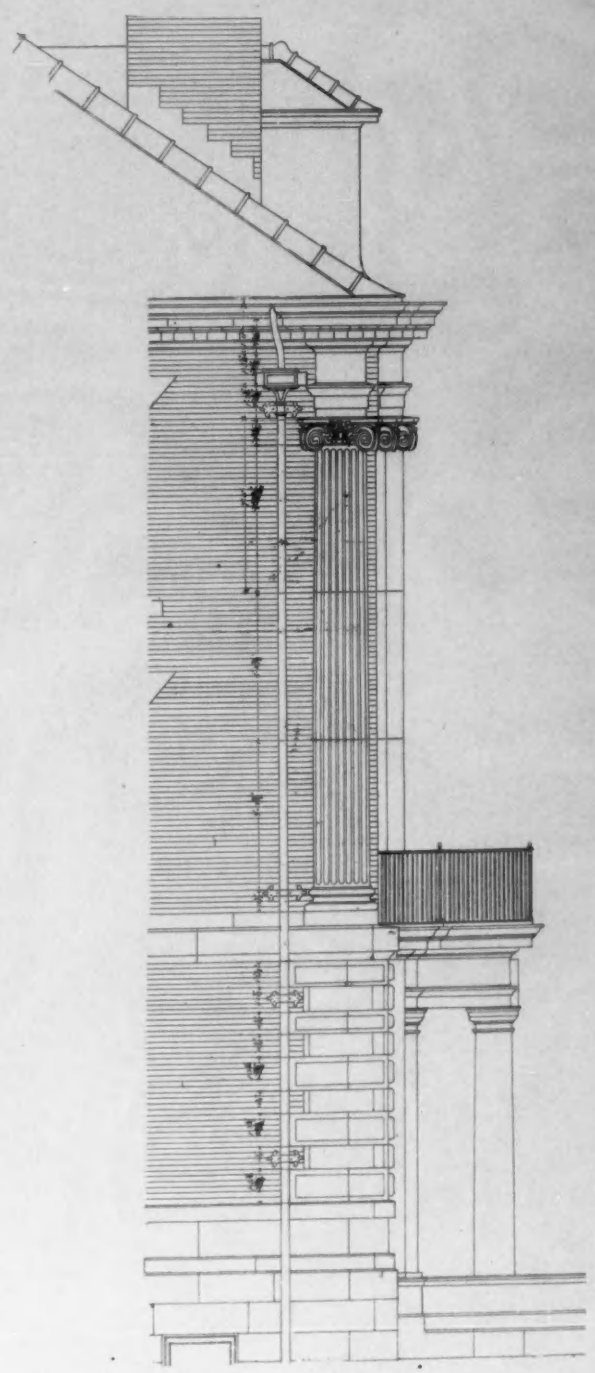
(FOR PLAN SEE PAGE 164, JUNE NUMBER.)

POLIN



ELEVATION OF CENTRAL MOTIVE.

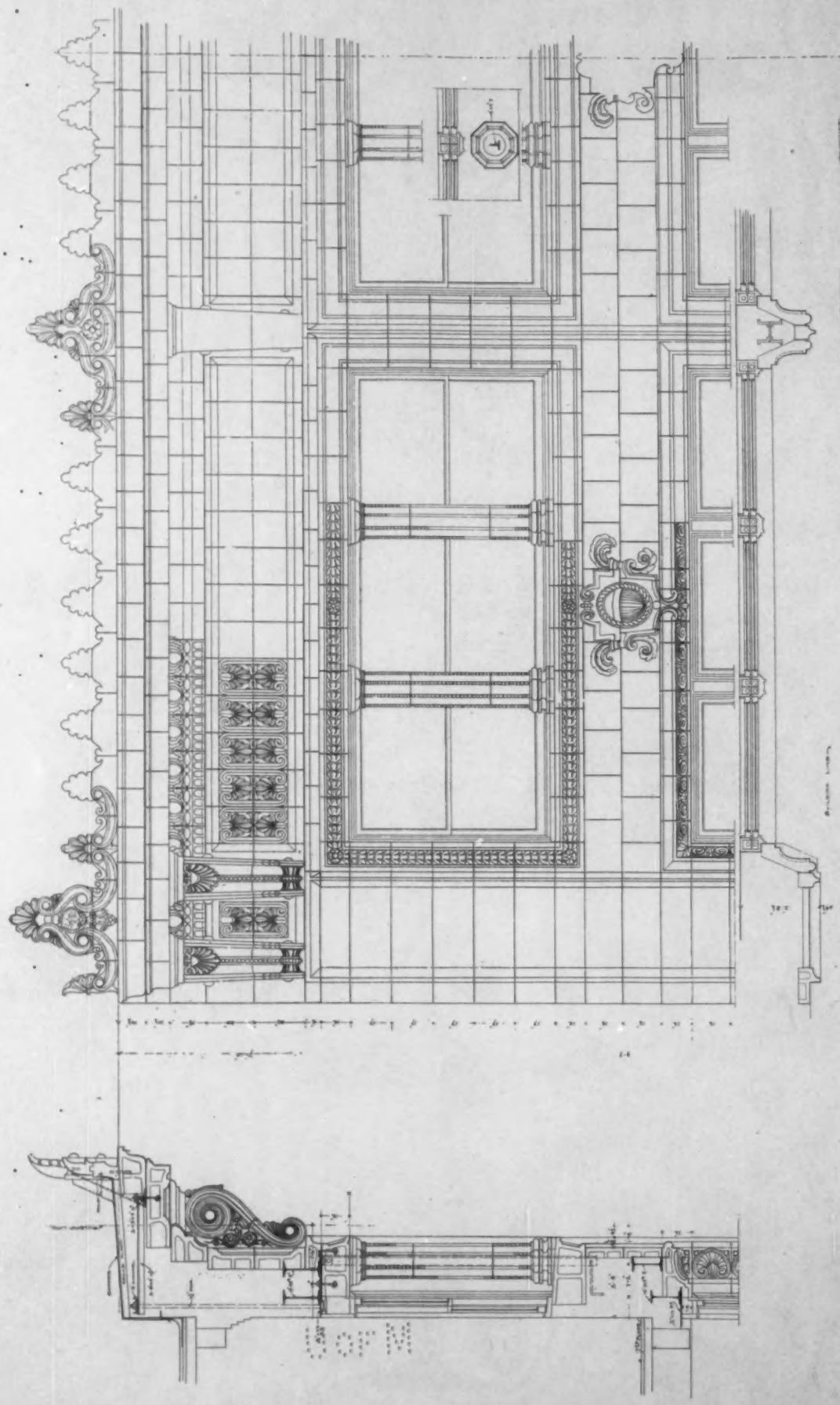


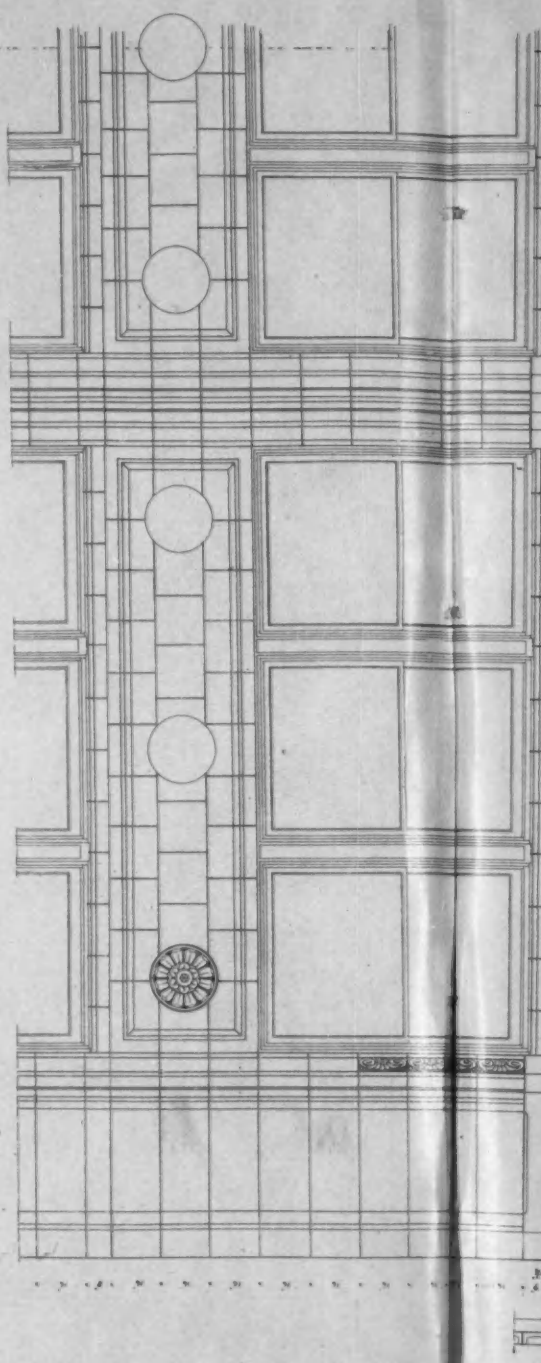


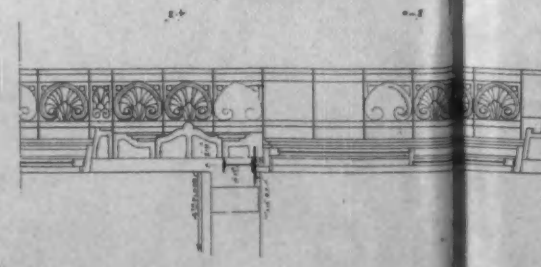
DETAILS THROUGH STAIRCASE WINDOWS.

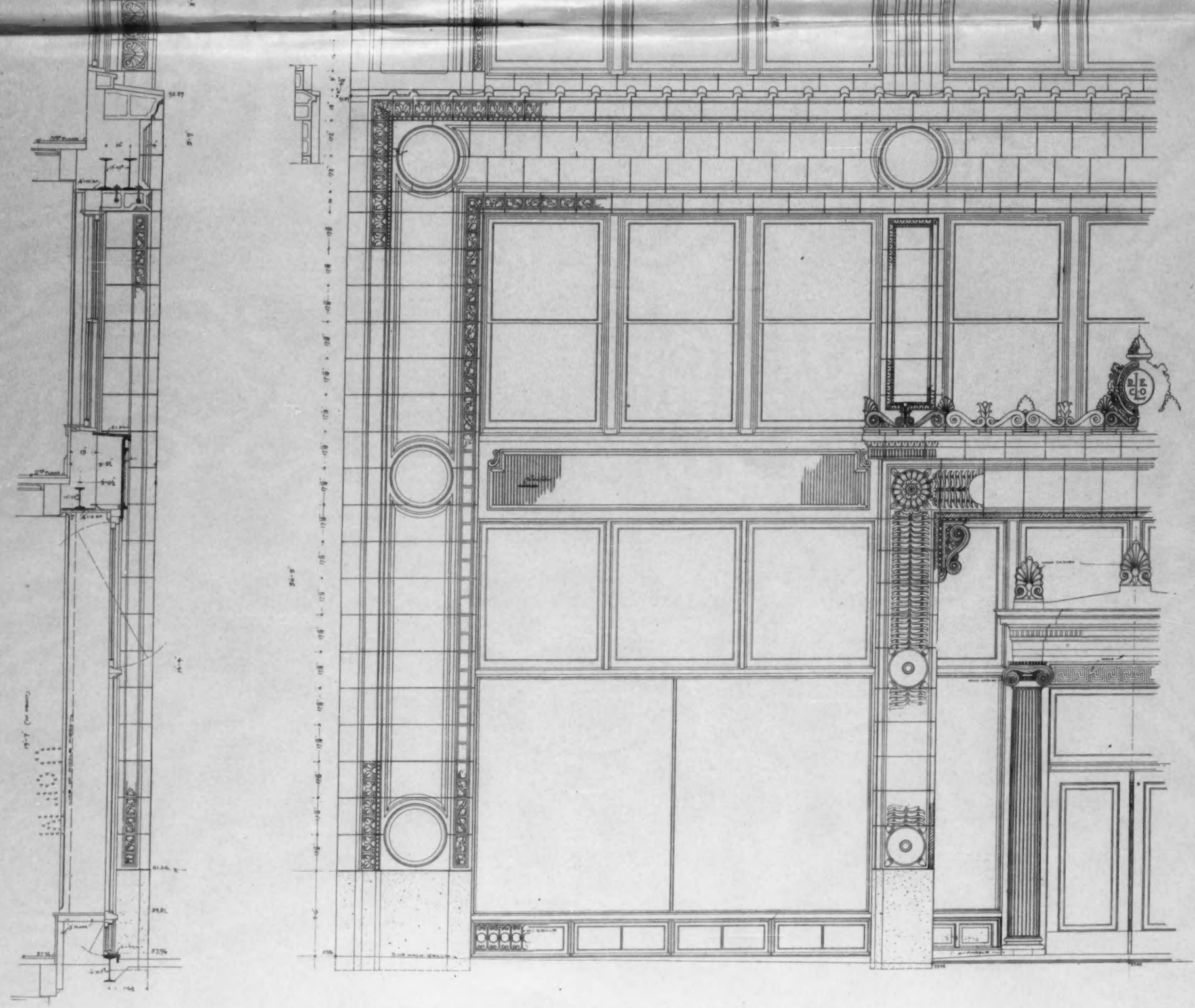
STILLMAN INFIRMARY FOR HARVARD UNIVERSITY, CAMBRIDGE, MASS.

SHEPLEY, RUTAN & COOLIDGE, ARCHITECTS.





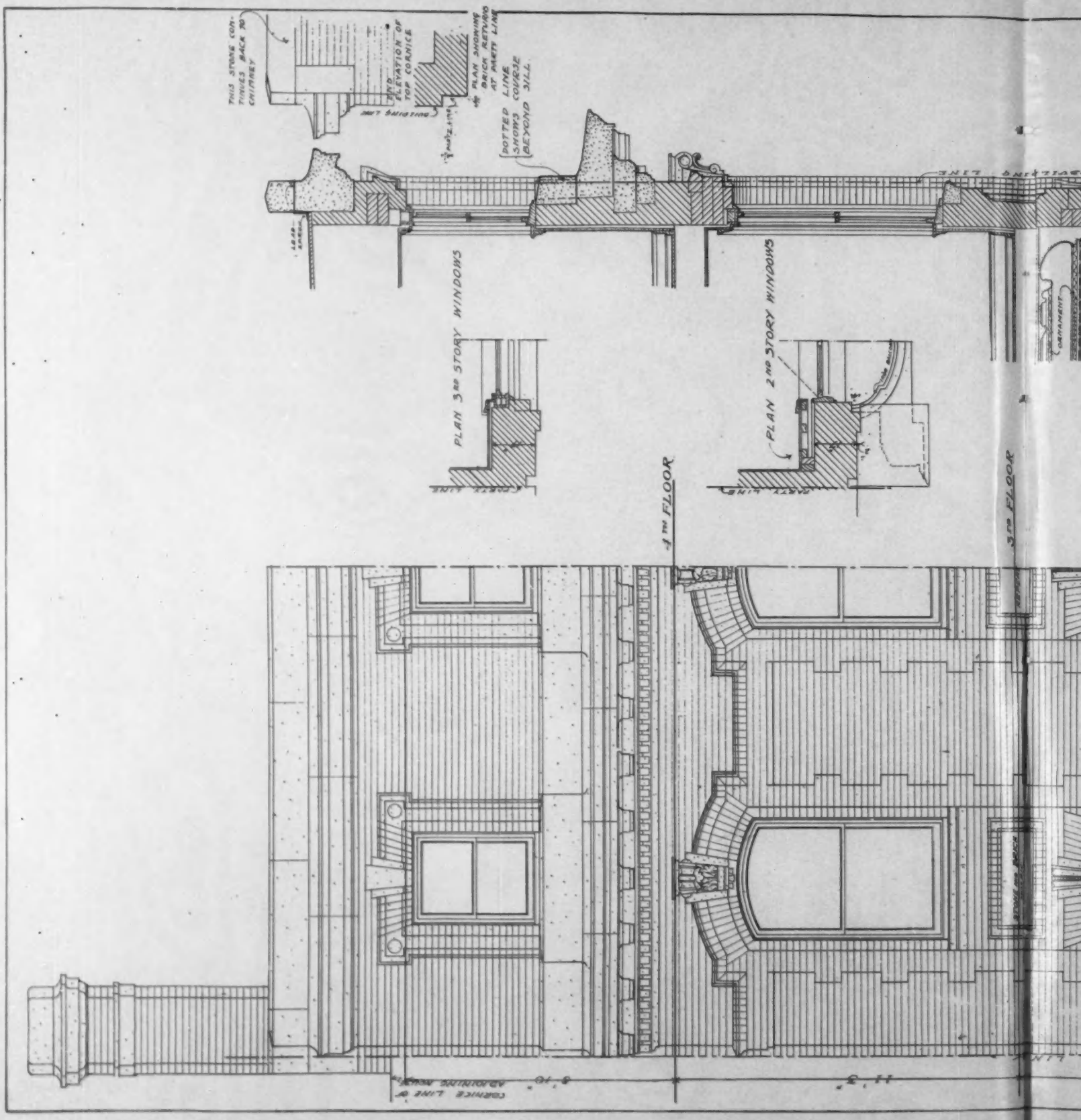


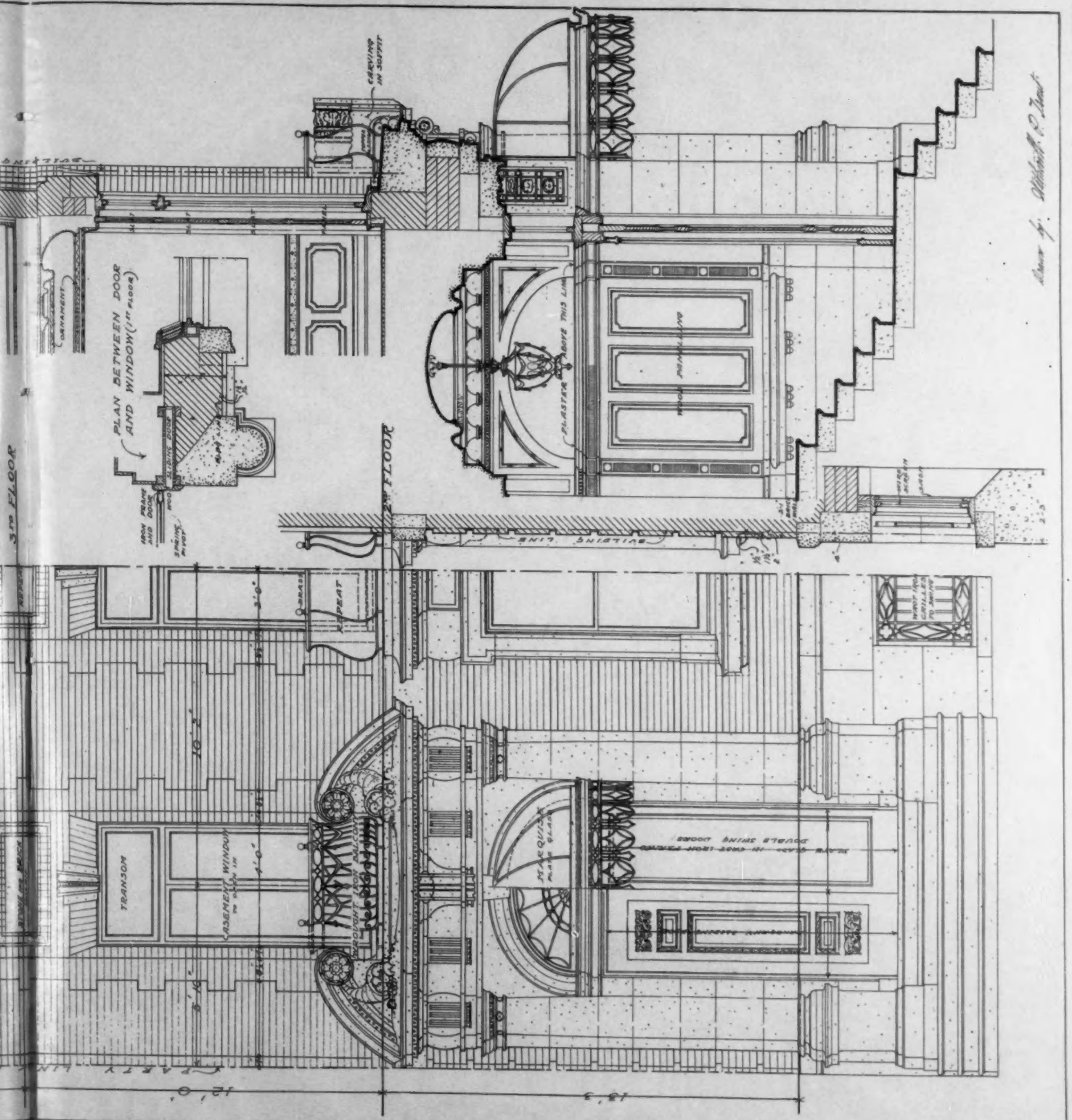


(BUILDING 7 STORIES HIGH. ILLUSTRATION SHOWS 1ST, 2ND AND UPPER STORIES OF ONE HALF OF FRONT.)

BUILDING FOR THE LINDELL REAL ESTATE COMPANY, ST. LOUIS, MO.

MAURAN, RUSSELL & GARDEN, ARCHITECTS.


THIS STONE CONTINUES BACK TO CHIMNEY
END ELEVATION OF TOP CORNICE
PLAN SHOWING BRICK RETURNED AT PARTY LINE
DOTTED LINE SHOWS COVESE BEYOND SILL
PLAN 3RD STORY WINDOWS
PLAN 2ND STORY WINDOWS
4TH FLOOR
3RD FLOOR
PARTY LINE
CORNICE LINE OF ADJOINING HOUSE
9' 10"
11' 3"



DETAILS OF FRONT ELEVATION.

HOUSE, LOCUST STREET, PHILADELPHIA, PA.

KENNEDY & KELSEY ARCHITECTS.